

PDRSF  
11.3.15.1-3

**Table 2-1**  
**Chemical Concentrations in Soil Samples - Petroleum Hydrocarbons**  
**Crawford Street**  
All results in mg/kg

Sample	Location	Date	Sample Depth (ft)	Gasoline	Diesel	Heavy oil
SS-01	Columbia Forge Yard	4/26/2001	0.5	4 U	250 U	3130
SS-02	Railroad drainage	4/26/2001	0.5	4 U	1000 U	13500
SS-03	Railroad drainage	4/26/2001	0.5	4 U	250 U	5350
SS-04	Railroad drainage	4/26/2001	0.5	4 U	500 U	6350
PP-1-24	Waterfront boring - west	4/25/2001	24.0	4 U	25 U	50 U
PP-2-20	Waterfront boring - middle	4/24/2001	20.0	4.84	25 U	50 U
PP-3-24	Waterfront boring - east	4/24/2001	24.0	4 U	25 U	50 U
SS-06	Pipe outfall	4/24/2001	0.5	4.8	25 U	50 U
SS-07	Pipe outfall	4/24/2001	0.5	4 U	31.7	70.4
SS-09	Pipe outfall	4/24/2001	0.5	4 U	25 U	50 U
SS-05	Black sand - beach	4/24/2001	0.5	4 U	25 U	50 U
SS-10	Black sand - bank	4/26/2001	2.0	4 U	78.3	180
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	4 U	25 U	194
BS-1A	Black sand - beach	6/22/2001	0.5	NA	NA	NA
BS-1B	Black sand - beach	6/22/2001	0.5	NA	NA	NA
BS-1C	Black sand - beach	6/22/2001	0.5	NA	NA	NA
BS-1D	Black sand - beach	6/22/2001	0.5	NA	NA	NA
CS-1	Black sand - beach	7/17/2001	0.5	NA	NA	NA
CS-2	Black sand - beach	7/17/2001	0.5	NA	NA	NA
CS-3	Black sand - beach	7/17/2001	0.5	NA	NA	NA
CS-4	Black sand - beach	7/17/2001	0.5	NA	NA	NA
SS-11	Metal debris - beach	4/24/2001	0.5	NA	NA	NA

U - Not detected at noted reporting limit  
NA - Not analyzed

USEPA SF



1315598

Table 2-2  
Chemical Concentrations in Soil Samples - SVOCs and PCBs  
Crawford Street  
All results in mg/kg

Sample	Location	Date	Sample Depth (ft)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	LPAs	HPAs	Total PAHs	PCBs
SS-01	Columbia Forge Yard	4/26/2001	0.5	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.123	0.0953	0.068	0.11	0.067 U	0.086	0.67 U	0.067 U	0.067 U	0.067 U	0.092		0.574	0.574	NA
SS-02	Railroad drainage	4/26/2001	0.5	0.134 U	0.134 U	0.134 U	2.68 U	0.67 U	0.67 U	0.67 U	0.67 U	2.68 U	0.67 U	1.34 U	0.67 U	0.67 U	0.134 U	0.134 U	2.68 U				NA
SS-03	Railroad drainage	4/26/2001	0.5	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U				NA
SS-04	Railroad drainage	4/26/2001	0.5	0.168 U	0.168 U	0.168 U	0.259	0.401	0.566	0.486	0.34	0.438	0.168 U	0.384	0.168 U	0.379	0.168 U	0.224	0.314	0.224	3.791	4.015	NA
PP-1-24	Waterfront boring - west	4/25/2001	24.0	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U				NA
PP-2-20	Waterfront boring - middle	4/24/2001	20.0	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U				NA
PP-3-24	Waterfront boring - east	4/24/2001	24.0	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U				NA
SS-06	Pipe outfall	4/24/2001	0.5	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.334	0.33		0.33	NA
SS-07	Pipe outfall	4/24/2001	0.5	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U				NA
SS-09	Pipe outfall	4/24/2001	0.5	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U				NA
SS-05	Black sand - beach	4/24/2001	0.5	0.067 U	0.067 U	0.067 U	0.0683	0.0828	0.0811	0.0742	0.072	0.084	0.067 U	0.144	0.067 U	0.067 U	0.067 U	0.168	0.127	0.168	0.901	1.069	0.224
SS-10	Black sand - bank	4/26/2001	2.0	0.096	0.67 U	0.192	0.498	0.768	0.728	0.573	0.682	0.632	0.168	0.927	0.100	0.515	0.067 U	0.658	0.742	1.046	6.233	7.278	1.11
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	NA	NA	NA	NA
BS-1A	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-1B	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-1C	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-1D	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CS-1	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CS-2	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CS-3	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CS-4	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SS-11	Metal debris - beach	4/24/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA
DEQ Soil Screening Level Value				20										30		10							4
DEQ Sediment Screening Level Value				0.29	0.16	0.057	0.032	0.032		0.3	0.027	0.057	0.033	0.111	0.077	0.017	0.176	0.042	0.053	0.076	0.193	1.61	0.034
McDonald Consensus TECs (sediment)						0.0572	0.108	0.15				0.166	0.033	0.423	0.077		0.176	0.204	0.195			1.61	0.06
McDonald Consensus PECs (sediment)						0.845	1.05	1.45				1.29		2.23	0.536		0.561	1.17	1.52			22.8	0.676
NOAA SQRT TEL (sediment)							0.0317	0.0319				0.057		0.111				0.042	0.053				0.034
EPA PRG (industrial)				38000		100000	2.9	0.29	2.9		29	290	0.29	30000	33000	2.9	190		54000				1
DEQ Generic Remedy (industrial)																							7.5

U - Not detected at noted reporting limit  
NA - Not analyzed

Table 2-3

## Chemical Concentrations in Soil Samples - Total Metals

## Crawford Street

All results in mg/kg

Sample	Location	Date	Sample Depth (ft)	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
SS-01	Columbia Forge Yard	4/26/2001	0.5	3.32	15.5	0.5 U	3.05	390	612	124	0.1 U	1240	0.5 U	1 U	0.5 U	265
SS-02	Railroad drainage	4/26/2001	0.5	1.18	10.9	0.815	0.5 U	812	136	106	0.1 U	81	0.846	1 U	0.5 U	246
SS-03	Railroad drainage	4/26/2001	0.5	1.3	18.4	0.5 U	2.43	125	247	123	0.1 U	409	0.588	1 U	0.5 U	526
SS-04	Railroad drainage	4/26/2001	0.5	0.918	9.69	0.5 U	0.814	48.7	172	184	0.136	62	0.502	1 U	0.5 U	375
PP-1-24	Waterfront boring - west	4/25/2001	24.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PP-2-20	Waterfront boring - middle	4/24/2001	20.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PP-3-24	Waterfront boring - east	4/24/2001	24.0	0.5 U	8.08	0.647	0.5 U	20.7	24.4	14.7	0.1 U	20.3	0.5 U	0.5 U	0.5 U	87.5
SS-06	Pipe outfall	4/24/2001	0.5	0.5 U	2.91	0.563	0.5 U	25.7	24.8	40.6	0.405	22	0.5 U	0.5 U	0.5 U	22.7 U
SS-07	Pipe outfall	4/24/2001	0.5	0.5 U	5.17	0.562	0.5 U	24.4	30.2	18.1	0.13	27.7	0.5 U	0.5 U	0.5 U	101
SS-09	Pipe outfall	4/24/2001	0.5	0.5 U	12.7	0.693	0.5 U	32.3	30.2	36.6	0.1 U	25.3	0.5 U	0.5 U	0.5 U	122
SS-05	Black sand - beach	4/24/2001	0.5	NA	NA	NA	0.5 U	202	NA	65.3	0.1 U	NA	NA	NA	NA	NA
SS-10	Black sand - bank	4/26/2001	2.0	NA	NA	NA	0.5 U	174	NA	140	0.1 U	NA	NA	NA	NA	NA
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	0.5 U	5.65	0.5 U	0.5 U	69	170	45.6	0.167	29	0.503	0.5 U	0.5 U	178
BS-1A	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	52.3	NA	NA	NA	NA	NA	NA
BS-1B	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	58.9	NA	NA	NA	NA	NA	NA
BS-1C	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	89	NA	NA	NA	NA	NA	NA
BS-1D	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	558	NA	NA	NA	NA	NA	NA
CS-1	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	42	NA	NA	NA	NA	NA	NA
CS-2	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	28	NA	NA	NA	NA	NA	NA
CS-3	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	2150	NA	NA	NA	NA	NA	NA
CS-4	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	26	NA	NA	NA	NA	NA	NA
SS-11	Metal debris - beach	4/24/2001	0.5	NA	12.6	NA	NA	82.7	122	29.4	NA	54.6	NA	NA	NA	209

## Background Concentrations

Clark County values (upland soil samples)	6	2	1	27	34	17	0.04	21					96
Portland Harbor values (beach samples)	5 U	5 U	0.7	0.6	41	60	30	0.1	32	15	1.4	13	118
DEQ Soil Screening Level Value	5	10	10	4	0.4	50	16	0.1	30	1	2	1	50
DEQ Sediment Screening Level Value	3	6		0.6	37	36	35	0.2	18		4.5		123
McDonald Consensus TECs (sediment)		9.79		0.99	43.4	31.6	35.8	0.18	22.7				121
McDonald Consensus PECs (sediment)		33		4.98	111	149	128	1.06	48.6				459
NOAA SQRT TEL (sediment)		5.9		0.596	37.3	35.7	35	0.174	18				123
EPA PRG (Industrial)	820	2.7	2200	810	1E+05	76000	750	88	41000	10000	10000	130	10000

U - Not detected at noted reporting limit

NA - Not analyzed

**Table 2-4**  
**Chemical Concentrations in Soil Samples - TCLP Metals**  
**Crawford Street**  
All results in mg/l

Sample	Location	Date	Sample Depth (ft)	TCLP Arsenic	TCLP Cadmium	TCLP Chromium	TCLP Copper	TCLP Lead	TCLP Mercury	TCLP Nickel	TCLP Zinc
SS-01	Columbia Forge Yard	4/26/2001	0.5	0.5 U	0.5 U	0.5 U	0.943	0.5 U	NA	1.07	3.22
SS-02	Railroad drainage	4/26/2001	0.5	0.5 U	NA	0.5 U	0.5 U	0.5 U	NA	0.5 U	1.27
SS-03	Railroad drainage	4/26/2001	0.5	0.5 U	NA	0.5 U	0.5 U	0.5 U	NA	0.5 U	1.4
SS-04	Railroad drainage	4/26/2001	0.5	0.5 U	NA	0.5 U	0.5 U	0.5 U	NA	0.5 U	1.83
PP-1-24	Waterfront boring - west	4/25/2001	24.0	NA	NA	NA	NA	NA	NA	NA	NA
PP-2-20	Waterfront boring - middle	4/24/2001	20.0	NA	NA	NA	NA	NA	NA	NA	NA
PP-3-24	Waterfront boring - east	4/24/2001	24.0	0.5 U	NA	NA	NA	NA	NA	NA	NA
SS-06	Pipe outfall	4/24/2001	0.5	NA	NA	NA	NA	0.5 U	0.0002 U	NA	NA
SS-07	Pipe outfall	4/24/2001	0.5	0.5 U	NA	NA	NA	NA	0.0002 U	NA	NA
SS-09	Pipe outfall	4/24/2001	0.5	0.5 U	NA	NA	NA	0.5 U	NA	NA	0.765
SS-05	Black sand - beach	4/24/2001	0.5	NA	NA	0.5 U	NA	7.39	NA	NA	NA
SS-10	Black sand - bank	4/26/2001	2.0	NA	NA	0.5	NA	1.1	NA	NA	NA
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.0002 U	NA	1.45
BS-1A	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	16.8	NA	NA	NA
BS-1B	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA
BS-1C	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA
BS-1D	Black sand - beach	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA
CS-1	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	0.17	NA	NA	NA
CS-2	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	0.3	NA	NA	NA
CS-3	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	14.2	NA	NA	NA
CS-4	Black sand - beach	7/17/2001	0.5	NA	NA	NA	NA	0.23	NA	NA	NA
SS-11	Metal debris - beach	4/24/2001	0.5	0.5 U	NA	0.5 U	0.5 U	NA	NA	0.5 U	0.757

U - Not detected at noted reporting limit  
NA - Not analyzed

**Table 2-5**  
**Chemical Concentrations in Groundwater Samples - SVOCs**  
**Crawford Street**  
 All results in µg/l

Probe/Well	Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
PP-1	4/25/2001	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PP-2	4/25/2001	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
PP-3	4/25/2001	0.1 U	0.1 U	0.1 U	0.1 U	0.128	0.1 U	0.122	0.1 U	0.1 U	0.1 U	0.172	0.1 U	0.1 U	0.138	0.243
PP-3	6/20/2001	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
DEQ Level II Surface Water S		520			0.027	0.014						6.16		620	6.3	

U - Not detected at noted reporting limit

NA - Not Analyzed

**Table 2-6****Chemical Concentrations in Groundwater Samples - Total Metals****Crawford Street**

All results in µg/l

Probe/Well	Date	Total Antimony	Total Arsenic	Total Beryllium	Total Cadmium	Total Chromium	Total Copper	Total Lead	Total Mercury	Total Nickel	Total Selenium	Total Silver	Total Thallium	Total Zinc
PP-1	4/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PP-2	4/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PP-3	4/25/2001	2 U	13	2 U	2 U	38.3	51.9	18.1	0.53	43.5	4.2	2 U	2 U	123
PP-3	6/20/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DEQ Level II Surface Water SLV		1600	150	5.3	2.2	0.21	9	2.5	0.77	52	5	0.12	40	120

U - Not detected at noted reporting limit

NA - Not Analyzed

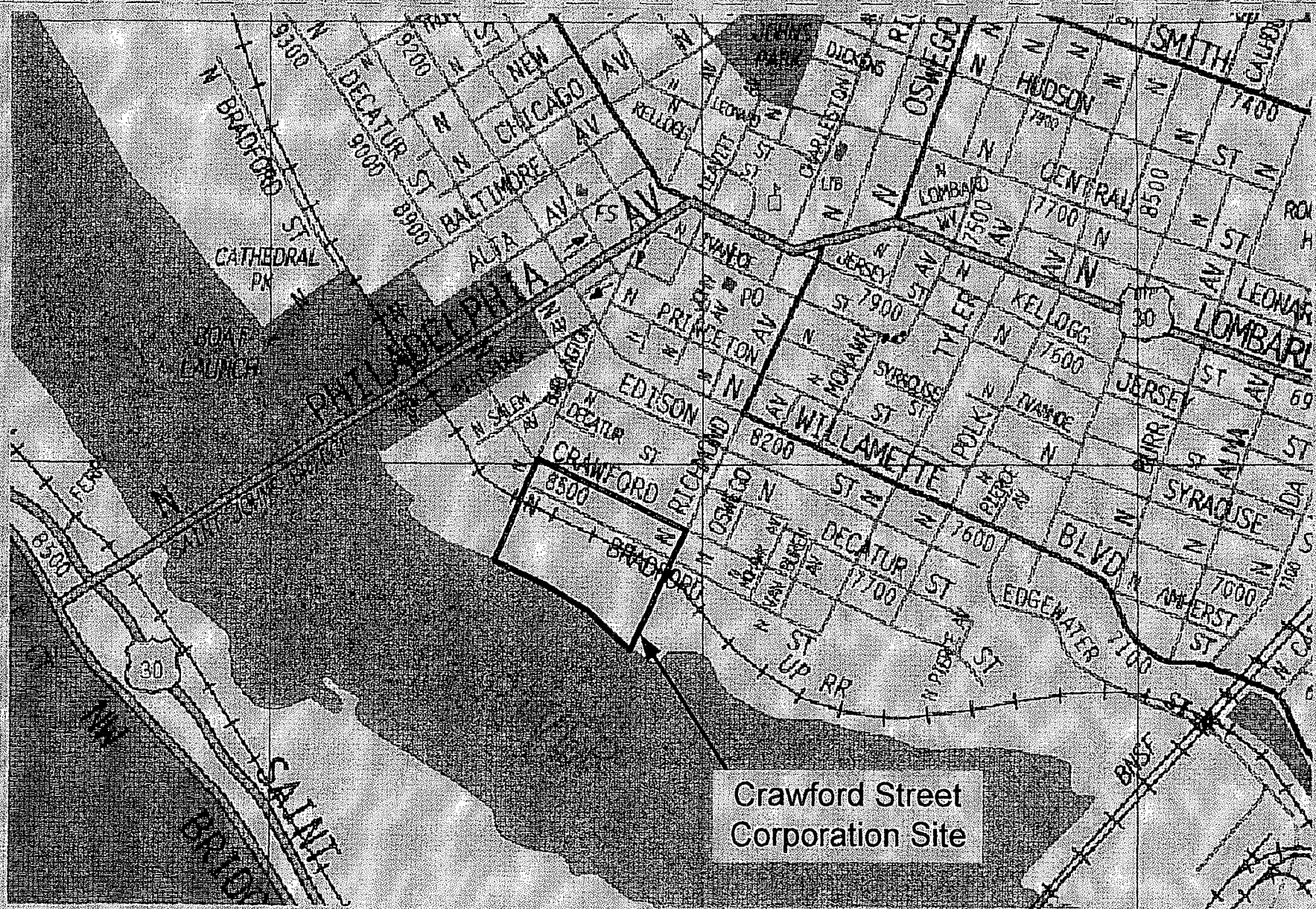
**Table 2-7**  
**Chemical Concentrations in Groundwater Samples - Dissolved Metals**  
**Crawford Street**  
 All results in µg/l

Probe/Well	Date	Dissolved Antimony	Dissolved Arsenic	Dissolved Beryllium	Dissolved Cadmium	Dissolved Chromium	Dissolved Copper	Dissolved Lead	Dissolved Mercury	Dissolved Nickel	Dissolved Selenium	Dissolved Silver	Dissolved Thallium	Dissolved Zinc
PP-1	4/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PP-2	4/25/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PP-3	4/25/2001	1 U	1.8	1 U	1 U	1 U	2 U	1 U	0.2 U	4.2	1 U	1 U	1 U	52.6
PP-3	6/20/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DEQ Level II Surface Water SLV		1600	150	5.3	2.2	0.21	9	2.5	0.77	52	5	0.12	40	120

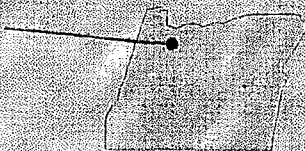
U - Not detected at noted reporting limit

NA - Not Analyzed

Figures



Portland,  
Oregon



## Approximate Scale

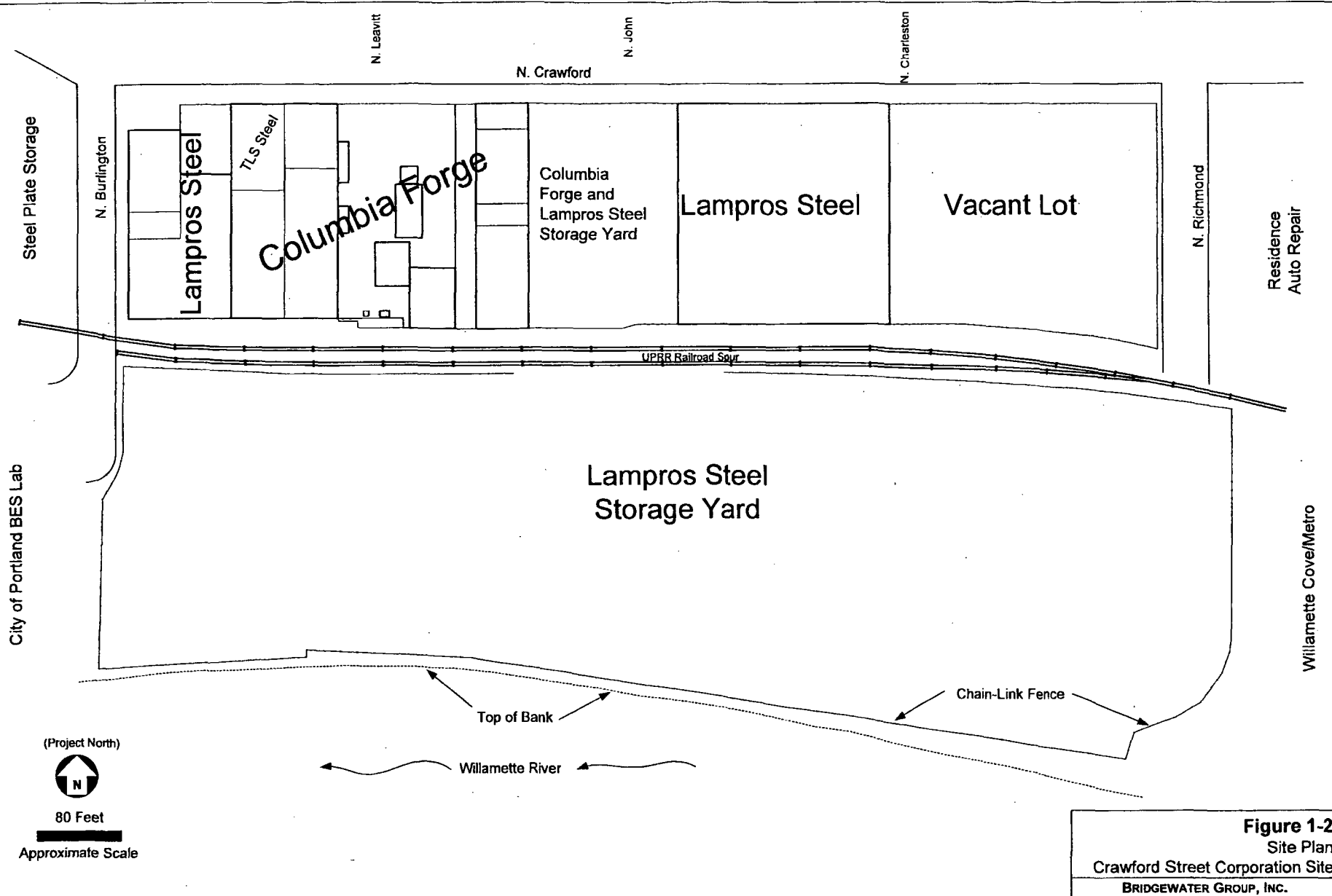
770 feet

### Figure 1-1

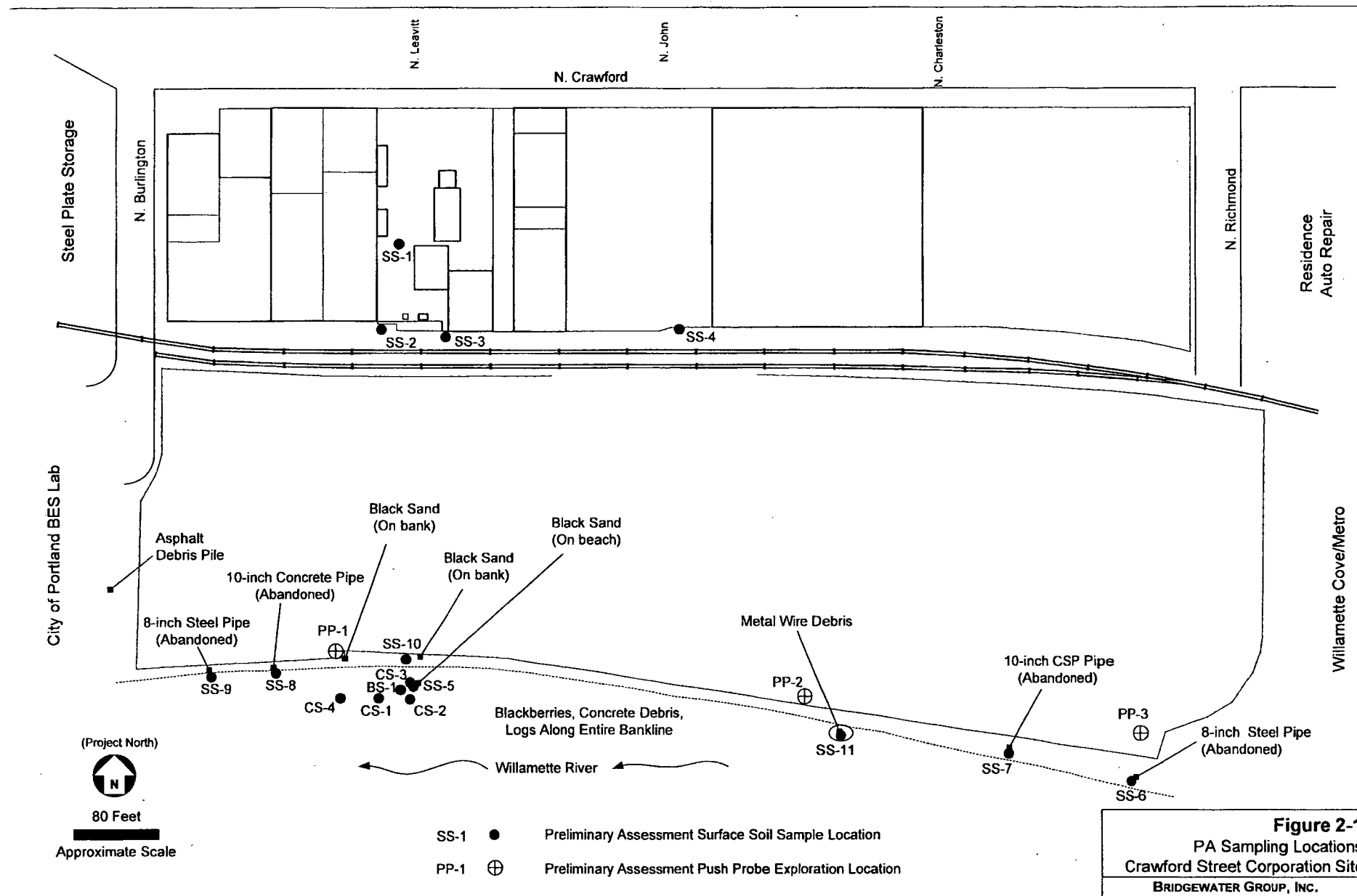
### Site Location Map

## Crawford Street Corporation Site

**BRIDGEWATER GROUP, INC.**



CRAW00004138







**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

**May, 2001**

**Ms Rieke  
Bridgewater Group  
500 Kruse Way Suite 110  
Oswego, OR 97035**

**1E: Crawford St.**

**Enclosed are the results of analyses for samples received by the laboratory on 05/14/01 14:50. If  
have any questions concerning this report, please feel free to contact me.**

**Sincerely,**

  
**Philip Nerenberg  
Laboratory Manager**

**Work Orders included in this report:  
P1E0434**

**North Creek Analytical, Inc.  
Environmental Laboratory Network**

**CRAW00004141**



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Midgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/20/01 21:42

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-5A	PIE0434-01	Soil	05/14/01 08:00	05/14/01 14:50
SS-10A	PIE0434-02	Soil	05/14/01 08:00	05/14/01 14:50

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004142



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**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
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**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
 541.383.9310 fax 541.382.7588

Bridgewater Group  
 4500 Kruse Way Suite 110  
 Lake Oswego, OR 97035

Project: Crawford St.  
 Project Number: na  
 Project Manager: Ross Rieke

Reported:  
 05/20/01 21:42

**Polychlorinated Biphenyls per EPA Method 8082**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>7-5A (P1E0434-01) Soil</b>									
						Sampled: 05/14/01 Received: 05/14/01			
Aroclor 1016	ND	67.0	ug/kg dry	1	EPA 8082	05/15/01	05/15/01	1050597	
Aroclor 1221	ND	134	"	"	"	"	"	"	
Aroclor 1232	ND	67.0	"	"	"	"	"	"	
Aroclor 1242	ND	67.0	"	"	"	"	"	"	
Aroclor 1248	ND	67.0	"	"	"	"	"	"	
Aroclor 1254	ND	67.0	"	"	"	"	"	"	
Aroclor 1260	224	67.0	"	"	"	"	"	"	
Surr: 2,4,5,6-Tetrachloro-m-xylene	108 %	63-119							
Surr: Decachlorobiphenyl	85.0 %	52-131							
<b>7-10A (P1E0434-02) Soil</b>									
						Sampled: 05/14/01 Received: 05/14/01			
Aroclor 1016	ND	67.0	ug/kg dry	1	EPA 8082	05/15/01	05/15/01	1050597	
Aroclor 1221	ND	134	"	"	"	"	"	"	
Aroclor 1232	ND	67.0	"	"	"	"	"	"	
Aroclor 1242	ND	67.0	"	"	"	"	"	"	
Aroclor 1248	ND	67.0	"	"	"	"	"	"	
Aroclor 1254	1110	67.0	"	"	"	"	"	"	
Aroclor 1260	ND	67.0	"	"	"	"	"	"	
Surr: 2,4,5,6-Tetrachloro-m-xylene	95.6 %	63-119							
Surr: Decachlorobiphenyl	82.8 %	52-131							

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CRAW00004143



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Idgewater Group  
1000 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Riecke

Reported:  
05/20/01 21:42

**Percent Dry Weight (Solids) per Standard Methods**  
**North Creek Analytical - Portland**

Sample	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Sampled: 05/14/01 Received: 05/14/01									
SS-5A (P1E0434-01) Soil									
Solids	98.2	1.00	% by Weight	1	NCA SOP	05/15/01	05/16/01	1050584	
Sampled: 05/14/01 Received: 05/14/01									
SS-10A (P1E0434-02) Soil									
Solids	97.0	1.00	% by Weight	1	NCA SOP	05/15/01	05/16/01	1050584	

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CRAW00004144



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Bridgewater Group  
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Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/20/01 21:42

Polyhalogenated Biphenyls per EPA Method 8082 - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1050597 - EPA 3550

##### Blank (1050597-BLK1)

Prepared: 05/15/01 Analyzed: 05/16/01

Aroclor 1016	ND	67.0	ug/kg wet						
Aroclor 1221	ND	134	"						
Aroclor 1232	ND	67.0	"						
Aroclor 1242	ND	67.0	"						
Aroclor 1248	ND	67.0	"						
Aroclor 1254	ND	67.0	"						
Aroclor 1260	ND	67.0	"						
Surr: 2,4,5,6-Tetrachloro-m-xylene	29.9		"	33.3		89.8	63-119		
Surr: Decachlorobiphenyl	27.8		"	33.3		83.5	52-131		

##### LCS (1050597-BS1)

Prepared: 05/15/01 Analyzed: 05/16/01

Aroclor 1016	350	67.0	ug/kg wet	333		105	57-132		
Aroclor 1260	347	67.0	"	333		104	60-136		
Surr: 2,4,5,6-Tetrachloro-m-xylene	36.6		"	33.3		110	63-119		
Surr: Decachlorobiphenyl	29.1		"	33.3		87.4	52-131		

##### Matrix Spike (1050597-MS1)

Source: PIE0434-01

Prepared & Analyzed: 05/15/01

Aroclor 1016	377	67.0	ug/kg dry	339	ND	111	57-132		
Aroclor 1260	489	67.0	"	339	224	78.2	60-136		
Surr: 2,4,5,6-Tetrachloro-m-xylene	37.1		"	33.9		109	63-119		
Surr: Decachlorobiphenyl	26.9		"	33.9		79.4	52-131		

##### Matrix Spike Dup (1050597-MSD1)

Source: PIE0434-01

Prepared & Analyzed: 05/15/01

Aroclor 1016	356	67.0	ug/kg dry	339	ND	105	57-132	5.73	50
Aroclor 1260	428	67.0	"	339	224	60.2	60-136	13.3	50
Surr: 2,4,5,6-Tetrachloro-m-xylene	35.4		"	33.9		104	63-119		
Surr: Decachlorobiphenyl	27.0		"	33.9		79.6	52-131		

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CRAW00004145



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Bridgewater Group  
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Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/20/01 21:42

### North Creek Analytical - Portland

analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
<b>atch 1050584 - Dry Weight</b>									
<b>uplicate (1050584-DUP2)</b> Source: P1E0434-01 Prepared: 05/15/01 Analyzed: 05/16/01									
% Solids	89.5	1.00 % by Weight		98.2			9.27	20	
<b>uplicate (1050584-DUP3)</b> Source: P1E0434-02 Prepared: 05/15/01 Analyzed: 05/16/01									
% Solids	97.0	1.00 % by Weight		97.0			0.00	20	

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CRAW00004146



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BridgeWater Group	Project: Crawford St.	
500 Kruse Way Suite 110	Project Number: na	Reported:
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/20/01 21:42

#### Notes and Definitions

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
- wet Sample results reported on a wet weight basis (as received)
- RPD Relative Percent Difference

North Creek Analytical - Portland

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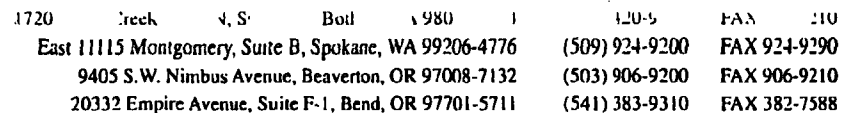
*PR*

Philip Nerenberg, Laboratory Manager

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CRAW00004147



Work Order #: P1E0434

CRAW000004148



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**May, 2001**

**ss Rieke  
Bridgewater Group  
1500 Kruse Way Suite 110  
Oswego, OR 97035**

**RE: Crawford St.**

**Enclosed are the results of analyses for samples received by the laboratory on 04/25/01 18:15. If  
you have any questions concerning this report, please feel free to contact me.**

**Sincerely,**

  
**Philip Nerenberg  
Laboratory Manager**

**Work Orders included in this report:  
P1D0852**

**North Creek Analytical, Inc.  
Environmental Laboratory Network**

**CRAW00004149**



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Bridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
P-1W	P1D0852-01	Water	04/25/01 15:45	04/25/01 18:15
PP-2W	P1D0852-02	Water	04/25/01 14:20	04/25/01 18:15
P-3W	P1D0852-03	Water	04/25/01 10:40	04/25/01 18:15
P-1-24	P1D0852-05	Soil	04/25/01 12:25	04/25/01 18:15
Trip Blank	P1D0852-06	Water	04/25/01 12:00	04/25/01 18:15

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1 of 53

CRAW00004150



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Bridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Gasoline Hydrocarbons per NW TPH-Gx Method**  
**North Creek Analytical - Portland**

anlyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>PP-1W (P1D0852-01) Water</b>						Sampled: 04/25/01 Received: 04/25/01			
Gasoline Range Hydrocarbons	ND	80.0	ug/l	1	NW TPH-Gx	04/26/01	04/26/01	1040917	-
Surr: 4-BFB	106 %	50-150							
<b>PP-2W (P1D0852-02) Water</b>						Sampled: 04/25/01 Received: 04/25/01			
Gasoline Range Hydrocarbons	ND	80.0	ug/l	1	NW TPH-Gx	04/26/01	04/27/01	1040917	
Surr: 4-BFB	102 %	50-150							
<b>PP-3W (P1D0852-03) Water</b>						Sampled: 04/25/01 Received: 04/25/01			
Gasoline Range Hydrocarbons	ND	80.0	ug/l	1	NW TPH-Gx	04/26/01	04/27/01	1040917	
Surr: 4-BFB	102 %	50-150							
<b>PP-1-24 (P1D0852-05) Soil</b>						Sampled: 04/25/01 Received: 04/25/01			
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/27/01	04/27/01	1040986	
Surr: 4-BFB	77.7 %	50-150							

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CRAW00004151



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Bridgewater Group  
1500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method**  
**North Creek Analytical - Portland**

nalyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>PP-1W (P1D0852-01RE1) Water</b>						Sampled: 04/25/01	Received: 04/25/01		
Diesel Range Organics	ND	0.250	mg/l	1	NWTPH-Dx	04/30/01	05/10/01	1041032	D-13
Heavy Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	D-13
Surr: 1-Chlorooctadecane	110 %	50-150							
<b>P-2W (P1D0852-02) Water</b>						Sampled: 04/25/01	Received: 04/25/01		
Diesel Range Organics	ND	0.250	mg/l	1	NWTPH-Dx	04/30/01	04/30/01	1041032	
Heavy Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	138 %	50-150							
<b>P-3W (P1D0852-03) Water</b>						Sampled: 04/25/01	Received: 04/25/01		
Diesel Range Organics	ND	0.250	mg/l	1	NWTPH-Dx	04/30/01	04/30/01	1041032	
Heavy Oil Range Hydrocarbons	ND	0.500	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	134 %	50-150							
<b>PP-1-24 (P1D0852-05) Soil</b>						Sampled: 04/25/01	Received: 04/25/01		
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	04/26/01	04/26/01	1040940	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	102 %	50-150							

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CRAW00004152



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Bridgewater Group  
1500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

### Total Metals per EPA 6000/7000 Series Methods

#### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PP-3W (P1D0852-03) Water						Sampled: 04/25/01 Received: 04/25/01			
Antimony	ND	0.00200	mg/l	1	EPA 6020	05/03/01	05/04/01	1050143	
Arsenic	0.0130	0.00200	"	"	"	"	05/03/01	"	
Beryllium	ND	0.00200	"	"	"	"	"	"	
Cadmium	ND	0.00200	"	"	"	"	"	"	
Chromium	0.0383	0.00200	"	"	"	"	"	"	
Copper	0.0519	0.00400	"	"	"	"	"	"	
Lead	0.0181	0.00200	"	"	"	"	05/04/01	"	
Mercury	0.000527	0.000200	"	"	EPA 7470A	05/04/01	05/04/01	1050158	
Nickel	0.0435	0.00400	"	"	EPA 6020	05/03/01	05/03/01	1050143	
Selenium	0.00420	0.00200	"	"	"	"	05/04/01	"	
Silver	ND	0.00200	"	"	"	"	"	"	
Sodium	ND	0.00200	"	"	"	"	"	"	
Zinc	0.123	0.0100	"	"	"	05/07/01	05/08/01	1050417	

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CRAW00004153



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500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke


Reported:  
05/21/01 15:38

**Dissolved Metals per EPA 6000/7000 Series Methods**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P-3W (P1D0852-03) Water						Sampled: 04/25/01 Received: 04/25/01			
Antimony	ND	0.00100	mg/l	1	EPA 6020	05/04/01	05/08/01	1050207	
Arsenic	0.00175	0.00100	"	"	"	"	"	"	
Beryllium	ND	0.00100	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00100	"	"	"	"	"	"	
Copper	ND	0.00200	"	"	"	"	05/08/01	"	
Lead	ND	0.00100	"	"	"	"	05/08/01	"	
Mercury	ND	0.000200	"	"	EPA 7470A	05/04/01	05/04/01	1050159	
Nickel	0.00418	0.00200	"	"	EPA 6020	05/04/01	05/08/01	1050207	
Selenium	ND	0.00100	"	"	"	"	"	"	
Silver	ND	0.00100	"	"	"	"	"	"	
Sulfur	ND	0.00100	"	"	"	"	"	"	
Zinc	0.0526	0.00500	"	"	"	"	"	"	

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541.383.9310 fax 541.382.7588

Bridgewater Group  
1500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PP-1W (P1D0852-01) Water						Sampled: 04/25/01 Received: 04/25/01			
acetone	ND	10.0	ug/l	1	EPA 8260B	04/27/01	04/27/01	1040970	
benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
bromochloromethane	ND	1.00	"	"	"	"	"	"	
bromodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
bromomethane	ND	5.00	"	"	"	"	"	"	
Butanone	ND	10.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
n-Butylbenzene	ND	1.00	"	"	"	"	"	"	
carbon disulfide	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
chlorobenzene	ND	1.00	"	"	"	"	"	"	
chloroethane	ND	1.00	"	"	"	"	"	"	
chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Chlorotoluene	ND	1.00	"	"	"	"	"	"	
Chlorotoluene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
tribromochloromethane	ND	1.00	"	"	"	"	"	"	
2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.00	"	"	"	"	"	"	
1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
ethylbenzene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004155



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509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PP-1W (P1D0852-01) Water						Sampled: 04/25/01 Received: 04/25/01			
1,2-Dichlorobutadiene	ND	2.00	ug/l	1	EPA 8260B	04/27/01	04/27/01	1040970	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	ND	2.00	"	"	"	"	"	"	
Isopropyltoluene	ND	2.00	"	"	"	"	"	"	
Methyl-2-pentanone	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.00	"	"	"	"	"	"	
1,2-Dichloroethene	ND	2.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
Xylene	ND	1.00	"	"	"	"	"	"	
p-Xylene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	92.5 %	75-125							
Surr: 1,2-DCA-d4	99.0 %	75-125							
Surr: Dibromofluoromethane	93.5 %	75-125							
Surr: Toluene-d8	96.0 %	75-125							

North Creek Analytical - Portland

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AN

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004156



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503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PP-2W (P1D0852-02) Water						Sampled: 04/25/01 Received: 04/25/01			
acetone	ND	10.0	ug/l	1	EPA 8260B	04/27/01	04/27/01	1040970	
benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
monochloromethane	ND	1.00	"	"	"	"	"	"	
monodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
monomethane	ND	5.00	"	"	"	"	"	"	
butanone	ND	10.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
t-Butylbenzene	ND	1.00	"	"	"	"	"	"	
carbon disulfide	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
chlorobenzene	ND	1.00	"	"	"	"	"	"	
chloroethane	ND	1.00	"	"	"	"	"	"	
chloroform	ND	1.00	"	"	"	"	"	"	
chloromethane	ND	5.00	"	"	"	"	"	"	
chlorotoluene	ND	1.00	"	"	"	"	"	"	
chlorotoluene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
bromochloromethane	ND	1.00	"	"	"	"	"	"	
2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.00	"	"	"	"	"	"	
1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
ethylbenzene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004157



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503.906.8200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

anlyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PP-2W (P1D0852-02) Water						Sampled: 04/25/01 Received: 04/25/01			
hexachlorobutadiene	ND	2.00	ug/l	1	EPA 8260B	04/27/01	04/27/01	1040970	
ε-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	ND	2.00	"	"	"	"	"	"	
Isopropyltoluene	ND	2.00	"	"	"	"	"	"	
Methyl-2-pentanone	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Methylene chloride	ND	5.00	"	"	"	"	"	"	
naphthalene	ND	2.00	"	"	"	"	"	"	
n-Propylbenzene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
m-Xylene	ND	1.00	"	"	"	"	"	"	
p-Xylene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	94.0 %	75-125							
Surr: 1,2-DCA-d4	102 %	75-125							
Surr: Dibromofluoromethane	94.0 %	75-125							
Surr: Toluene-d8	98.5 %	75-125							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004158



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4778  
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Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke


Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

alyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PP-3W (PID0852-03) Water						Sampled: 04/25/01 Received: 04/25/01			
acetone	ND	10.0	ug/l	1	EPA 8260B	04/27/01	04/27/01	1040970	
benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
monochloromethane	ND	1.00	"	"	"	"	"	"	
modichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
monomethane	ND	5.00	"	"	"	"	"	"	
butanone	ND	10.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
-Butylbenzene	ND	1.00	"	"	"	"	"	"	
carbon disulfide	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
chlorobenzene	ND	1.00	"	"	"	"	"	"	
chloroethane	ND	1.00	"	"	"	"	"	"	
chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Chlorotoluene	ND	1.00	"	"	"	"	"	"	
Chlorotoluene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
bromochloromethane	ND	1.00	"	"	"	"	"	"	
-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.00	"	"	"	"	"	"	
-Dichloroethane	ND	1.00	"	"	"	"	"	"	
-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
ns-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
-Dichloropropane	ND	1.00	"	"	"	"	"	"	
-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
ylbenzene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004159



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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

bridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

## Volatile Organic Compounds per EPA Method 8260B

### North Creek Analytical - Portland

nalyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PP-3W (P1D0852-03) Water						Sampled: 04/25/01 Received: 04/25/01			
hexachlorobutadiene	ND	2.00	ug/l	1	EPA 8260B	04/27/01	04/27/01	1040970	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	ND	2.00	"	"	"	"	"	"	
Isopropyltoluene	ND	2.00	"	"	"	"	"	"	
Methyl-2-pentanone	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
tethylene chloride	ND	5.00	"	"	"	"	"	"	
aphthalene	ND	2.00	"	"	"	"	"	"	
n-Propylbenzene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
toluene	ND	1.00	"	"	"	"	"	"	
2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
ichloroethene	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
-Xylene	ND	1.00	"	"	"	"	"	"	
,p-Xylene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	91.5 %	75-125							
Surr: 1,2-DCA-d4	102 %	75-125							
Surr: Dibromofluoromethane	94.0 %	75-125							
Surr: Toluene-d8	98.0 %	75-125							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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Environmental Laboratory Network

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CRAW00004160



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Ricke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

nalyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PP-1-24 (P1D0852-05) Soil						Sampled: 04/25/01 Received: 04/25/01			
cetone	ND	1000	ug/kg dry	1	EPA 8260B	04/26/01	04/30/01	1040947	
benzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
monochloromethane	ND	100	"	"	"	"	"	"	
monodichloromethane	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
monomethane	ND	500	"	"	"	"	"	"	
Butanone	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
carbon disulfide	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
chlorobenzene	ND	100	"	"	"	"	"	"	
chloroethane	ND	100	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Chlorotoluene	ND	100	"	"	"	"	"	"	
Chlorotoluene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	500	"	"	"	"	"	"	
tribromochloromethane	ND	100	"	"	"	"	"	"	
2-Dibromoethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	500	"	"	"	"	"	"	
1-Dichloroethane	ND	100	"	"	"	"	"	"	
2-Dichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
2-Dichloropropane	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
2-Dichloropropane	ND	100	"	"	"	"	"	"	
1-Dichloropropene	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
thylbenzene	ND	100	"	"	"	"	"	"	

North Creek Analytical - Portland

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*PR*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004161



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ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>DP-1-24 (P1D0852-05) Soil</b> <span style="float: right;">Sampled: 04/25/01 Received: 04/25/01</span>									
1,2-Dichlorobutadiene	ND	200	ug/kg dry	1	EPA 8260B	04/26/01	04/30/01	1040947	
2-Hexanone	ND	1000	"	"	"	"	"	"	
Isopropylbenzene	ND	200	"	"	"	"	"	"	
Isopropyltoluene	ND	200	"	"	"	"	"	"	
Methyl-2-pentanone	ND	500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	100	"	"	"	"	"	"	
ethylene chloride	ND	500	"	"	"	"	"	"	
naphthalene	ND	200	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	ND	100	"	"	"	"	"	"	
toluene	ND	100	"	"	"	"	"	"	
2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethene	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane	ND	100	"	"	"	"	"	"	
2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Xylene	ND	100	"	"	"	"	"	"	
p-Xylene	ND	200	"	"	"	"	"	"	
Surr: 4-BFB	97.0 %	70-130							
Surr: 1,2-DCA-d4	108 %	70-130							
Surr: Dibromofluoromethane	97.9 %	70-130							
Surr: Toluene-d8	109 %	70-130							

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*PN*

Philip Nerenberg, Laboratory Manager

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Environmental Laboratory Network

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CRAW00004162



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541.383.9310 fax 541.382.7588

Midgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

Valuate	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>Trip Blank (P1D0852-06) Water</b>					Sampled: 04/25/01 Received: 04/25/01				
Acetone	ND	10.0	ug/l	1	EPA 8260B	04/27/01	04/27/01	1040971	
Benzene	ND	1.00	"	"	"	"	"	"	
Bromobenzene	ND	1.00	"	"	"	"	"	"	
Bromochloromethane	ND	1.00	"	"	"	"	"	"	
Bromodichloromethane	ND	1.00	"	"	"	"	"	"	
Bromoform	ND	1.00	"	"	"	"	"	"	
Bromomethane	ND	5.00	"	"	"	"	"	"	
Butanone	ND	10.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.00	"	"	"	"	"	"	
sec-Butylbenzene	ND	1.00	"	"	"	"	"	"	
n-Butylbenzene	ND	1.00	"	"	"	"	"	"	
Carbon disulfide	ND	10.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.00	"	"	"	"	"	"	
Chlorobenzene	ND	1.00	"	"	"	"	"	"	
Chloroethane	ND	1.00	"	"	"	"	"	"	
Chloroform	ND	1.00	"	"	"	"	"	"	
Chloromethane	ND	5.00	"	"	"	"	"	"	
Chlorotoluene	ND	1.00	"	"	"	"	"	"	
Chlorotoluene	ND	1.00	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	"	"	"	"	"	"	
1,1-Dibromochloromethane	ND	1.00	"	"	"	"	"	"	
1,2-Dibromoethane	ND	1.00	"	"	"	"	"	"	
Dibromomethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.00	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,1-Dichloroethene	ND	1.00	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,3-Dichloropropane	ND	1.00	"	"	"	"	"	"	
2,2-Dichloropropane	ND	1.00	"	"	"	"	"	"	
1,1-Dichloropropene	ND	1.00	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.00	"	"	"	"	"	"	
Toluene	ND	1.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004163



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ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>Tip Blank (PID0852-06) Water</b>						Sampled: 04/25/01 Received: 04/25/01			
1,2-Dichlorobutadiene	ND	2.00	ug/l	1	EPA 8260B	04/27/01	04/27/01	1040971	
2-Hexanone	ND	10.0	"	"	"	"	"	"	
Isopropylbenzene	ND	2.00	"	"	"	"	"	"	
Isopropyltoluene	ND	2.00	"	"	"	"	"	"	
Methyl-2-pentanone	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.00	"	"	"	"	"	"	
Ethylene chloride	ND	5.00	"	"	"	"	"	"	
1,2-Dipthalene	ND	2.00	"	"	"	"	"	"	
n-Propylbenzene	ND	1.00	"	"	"	"	"	"	
Styrene	ND	1.00	"	"	"	"	"	"	
1,1,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Tetrachloroethene	ND	1.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.00	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.00	"	"	"	"	"	"	
2,3-Trichloropropane	ND	1.00	"	"	"	"	"	"	
2,4-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.00	"	"	"	"	"	"	
Vinyl chloride	ND	1.00	"	"	"	"	"	"	
Xylene	ND	1.00	"	"	"	"	"	"	
m,p-Xylene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	96.0 %	75-125							
Surr: 1,2-DCA-d4	100 %	75-125							
Surr: Dibromofluoromethane	101 %	75-125							
Surr: Toluene-d8	99.5 %	75-125							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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Environmental Laboratory Network

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CRAW00004164



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 541.383.9310 fax 541.382.7588

Bridgewater Group  
 4500 Kruse Way Suite 110  
 Lake Oswego, OR 97035

Project: Crawford St.  
 Project Number: na  
 Project Manager: Ross Riecke

Reported:  
 05/21/01 15:38

**Semivolatile Organic Compounds per EPA Method 8270C**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>PP-1W (PID0852-01) Water</b>						Sampled: 04/25/01 Received: 04/25/01			
acenaphthene	ND	5.00	ug/l	1	EPA 8270C	05/01/01	05/07/01	1050031	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
benzo (ghi) perylene	ND	5.00	"	"	"	"	"	"	
benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzoic Acid	ND	50.0	"	"	"	"	"	"	
Benzyl alcohol	ND	10.0	"	"	"	"	"	"	
Bromophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
butyl benzyl phthalate	ND	5.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	5.00	"	"	"	"	"	"	
Chloroaniline	ND	20.0	"	"	"	"	"	"	
is(2-chloroethoxy)methane	ND	10.0	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	5.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	10.0	"	"	"	"	"	"	
Chloronaphthalene	ND	5.00	"	"	"	"	"	"	
Chlorophenol	ND	5.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
i-n-butyl phthalate	ND	5.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	5.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	5.00	"	"	"	"	"	"	
ibenzofuran	ND	5.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
4-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
3'-Dichlorobenzidine	ND	5.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	5.00	"	"	"	"	"	"	
Diethyl phthalate	ND	5.00	"	"	"	"	"	"	
4-Dimethylphenol	ND	10.0	"	"	"	"	"	"	
dimethyl phthalate	ND	5.00	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	10.0	"	"	"	"	"	"	
4-Dinitrophenol	ND	25.0	"	"	"	"	"	"	
4-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
fluoranthene	ND	5.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004165



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Semivolatile Organic Compounds per EPA Method 8270C**  
**North Creek Analytical - Portland**

anlyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>PP-1W (P1D0852-01) Water</b>						Sampled: 04/25/01 Received: 04/25/01			
luorene	ND	5.00	ug/l	1	EPA 8270C	05/01/01	05/07/01	1050031	
Hexachlorobenzene	ND	5.00	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10.0	"	"	"	"	"	"	
exachlorocyclopentadiene	ND	10.0	"	"	"	"	"	"	
exachloroethane	ND	10.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	5.00	"	"	"	"	"	"	
ophorone	ND	5.00	"	"	"	"	"	"	
-Methylnaphthalene	ND	5.00	"	"	"	"	"	"	
2-Methylphenol	ND	10.0	"	"	"	"	"	"	
3-,4-Methylphenol	ND	5.00	"	"	"	"	"	"	
aphthalene	ND	5.00	"	"	"	"	"	"	
-Nitroaniline	ND	5.00	"	"	"	"	"	"	
3-Nitroaniline	ND	10.0	"	"	"	"	"	"	
-Nitroaniline	ND	10.0	"	"	"	"	"	"	
itrobenzene	ND	5.00	"	"	"	"	"	"	
2-Nitrophenol	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	25.0	"	"	"	"	"	"	
-Nitrosodi-n-propylamine	ND	10.0	"	"	"	"	"	"	
-Nitrosodiphenylamine	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	10.0	"	"	"	"	"	"	
henanthrene	ND	5.00	"	"	"	"	"	"	
henol	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.00	"	"	"	"	"	"	
,4,5-Trichlorophenol	ND	5.00	"	"	"	"	"	"	
-,4,6-Trichlorophenol	ND	5.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	48.3 %	26-135							
urr: 2-Fluorophenol	21.5 %	6-124							
urr: Nitrobenzene-d5	59.3 %	23-147							
Surr: Phenol-d6	14.3 %	11-130							
Surr: p-Terphenyl-d14	85.0 %	38-149							
urr: 2,4,6-Tribromophenol	60.8 %	19-126							

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CRAW00004166



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Semivolatile Organic Compounds per EPA Method 8270C**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P-2W (PID0852-02) Water						Sampled: 04/25/01 Received: 04/25/01			
acenaphthene	ND	5.00	ug/l	1	EPA 8270C	05/01/01	05/07/01	1050031	
Acenaphthylene	ND	5.00	"	"	"	"	"	"	
Anthracene	ND	5.00	"	"	"	"	"	"	
benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
benzo (ghi) perylene	ND	5.00	"	"	"	"	"	"	
benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzoic Acid	ND	50.0	"	"	"	"	"	"	
Benzyl alcohol	ND	10.0	"	"	"	"	"	"	
Bromophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
butyl benzyl phthalate	ND	5.00	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	5.00	"	"	"	"	"	"	
Chloroaniline	ND	20.0	"	"	"	"	"	"	
is(2-chloroethoxy)methane	ND	10.0	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	5.00	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	10.0	"	"	"	"	"	"	
Chloronaphthalene	ND	5.00	"	"	"	"	"	"	
2-Chlorophenol	ND	5.00	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	5.00	"	"	"	"	"	"	
chrysene	ND	5.00	"	"	"	"	"	"	
di-n-butyl phthalate	ND	5.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	5.00	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	5.00	"	"	"	"	"	"	
dibenzofuran	ND	5.00	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.00	"	"	"	"	"	"	
1,3'-Dichlorobenzidine	ND	5.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	5.00	"	"	"	"	"	"	
Diethyl phthalate	ND	5.00	"	"	"	"	"	"	
1,4-Dimethylphenol	ND	10.0	"	"	"	"	"	"	
Dimethyl phthalate	ND	5.00	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	10.0	"	"	"	"	"	"	
1,4-Dinitrophenol	ND	25.0	"	"	"	"	"	"	
1,4-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	5.00	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	10.0	"	"	"	"	"	"	
fluoranthene	ND	5.00	"	"	"	"	"	"	

North Creek Analytical - Portland

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CRAW00004167



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Semivolatile Organic Compounds per EPA Method 8270C  
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P1D0852-02 Water						Sampled: 04/25/01 Received: 04/25/01			
luorene	ND	5.00	ug/l	1	EPA 8270C	05/01/01	05/07/01	1050031	
Hexachlorobenzene	ND	5.00	"	"	"	"	"	"	
Hexachlorobutadiene	ND	10.0	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	10.0	"	"	"	"	"	"	
Hexachloroethane	ND	10.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	5.00	"	"	"	"	"	"	
ophorone	ND	5.00	"	"	"	"	"	"	
Methylnaphthalene	ND	5.00	"	"	"	"	"	"	
2-Methylphenol	ND	10.0	"	"	"	"	"	"	
2,4-Methylphenol	ND	5.00	"	"	"	"	"	"	
aphthalene	ND	5.00	"	"	"	"	"	"	
2-Nitroaniline	ND	5.00	"	"	"	"	"	"	
3-Nitroaniline	ND	10.0	"	"	"	"	"	"	
Nitroaniline	ND	10.0	"	"	"	"	"	"	
itrobenzene	ND	5.00	"	"	"	"	"	"	
2-Nitrophenol	ND	5.00	"	"	"	"	"	"	
4-Nitrophenol	ND	25.0	"	"	"	"	"	"	
-Nitrosodi-n-propylamine	ND	10.0	"	"	"	"	"	"	
-Nitrosodiphenylamine	ND	5.00	"	"	"	"	"	"	
Pentachlorophenol	ND	10.0	"	"	"	"	"	"	
nenanthrene	ND	5.00	"	"	"	"	"	"	
enol	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.00	"	"	"	"	"	"	
4,5-Trichlorophenol	ND	5.00	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	5.00	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	46.8 %	26-135							
Surr: 2-Fluorophenol	28.5 %	6-124							
Surr: Nitrobenzene-d5	64.4 %	23-147							
Surr: Phenol-d6	19.0 %	11-130							
Surr: p-Terphenyl-d14	97.7 %	38-149							
Surr: 2,4,6-Tribromophenol	83.8 %	19-126							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004168



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Semivolatile Organic Compounds per EPA Method 8270C**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P-1-24 (PID0852-05) Soil						Sampled: 04/25/01 Received: 04/25/01			
acenaphthene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Acenaphthylene	ND	0.330	"	"	"	"	"	"	
Anthracene	ND	0.330	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.330	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.330	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.330	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.330	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.330	"	"	"	"	"	"	
Benzoic Acid	ND	1.00	"	"	"	"	"	"	
Benzyl alcohol	ND	0.330	"	"	"	"	"	"	
Bromophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	0.330	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.330	"	"	"	"	"	"	
Chloroaniline	ND	2.00	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	0.330	"	"	"	"	"	"	
Chloronaphthalene	ND	0.330	"	"	"	"	"	"	
2-Chlorophenol	ND	0.330	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
Chrysene	ND	0.330	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	1.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	0.330	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.330	"	"	"	"	"	"	
Dibenzofuran	ND	0.330	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
2,3-Dichlorobenzidine	ND	1.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	0.330	"	"	"	"	"	"	
Diethyl phthalate	ND	0.330	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	1.00	"	"	"	"	"	"	
Dimethyl phthalate	ND	0.330	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1.00	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	2.00	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	0.330	"	"	"	"	"	"	

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004169



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

### Semivolatile Organic Compounds per EPA Method 8270C

#### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
-1-24 (P1D0852-05) Soil						Sampled: 04/25/01 Received: 04/25/01			
Acetophenone	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Hexachlorobenzene	ND	0.330	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1.00	"	"	"	"	"	"	
Hexachloroethane	ND	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.330	"	"	"	"	"	"	
Isophorone	ND	0.330	"	"	"	"	"	"	
Methylnaphthalene	ND	0.330	"	"	"	"	"	"	
2-Methylphenol	ND	0.330	"	"	"	"	"	"	
4-Methylphenol	ND	0.330	"	"	"	"	"	"	
Phthalene	ND	0.330	"	"	"	"	"	"	
2-Nitroaniline	ND	0.330	"	"	"	"	"	"	
3-Nitroaniline	ND	1.00	"	"	"	"	"	"	
Nitroaniline	ND	0.330	"	"	"	"	"	"	
Trobenzene	ND	0.330	"	"	"	"	"	"	
2-Nitrophenol	ND	0.330	"	"	"	"	"	"	
Nitrophenol	ND	1.00	"	"	"	"	"	"	
Nitrosodi-n-propylamine	ND	0.330	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	0.330	"	"	"	"	"	"	
Pentachlorophenol	ND	1.00	"	"	"	"	"	"	
Benanthrene	ND	0.330	"	"	"	"	"	"	
Benol	ND	0.330	"	"	"	"	"	"	
Pyrene	ND	0.330	"	"	"	"	"	"	
2,4-Trichlorobenzene	ND	0.330	"	"	"	"	"	"	
4,5-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	84.5 %	44-146							
Surr: 2-Fluorophenol	83.9 %	42-126							
Surr: Nitrobenzene-d5	79.4 %	42-126							
Surr: Phenol-d6	81.6 %	42-131							
Surr: p-Terphenyl-d14	99.7 %	49-150							
Surr: 2,4,6-Tribromophenol	106 %	48-119							

North Creek Analytical - Portland

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Neil Nerenberg, Laboratory Manager

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CRAW00004170



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541.383.9310 fax 541.382.7588

Ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P-3W (P1D0852-03) Water						Sampled: 04/25/01 Received: 04/25/01			
Acenaphthene	ND	0.100	ug/l	1	EPA 8270m	04/30/01	05/07/01	1041026	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	0.128	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	0.122	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	0.172	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Isophthalene	ND	0.100	"	"	"	"	"	"	
Phenanthrene	0.138	0.100	"	"	"	"	"	"	
Pyrene	0.243	0.100	"	"	"	"	"	"	
<hr/>									
Surr: Fluorene-d10	74.6 %	25-105							
Surr: Pyrene-d10	108 %	30-130							
Surr: Benzo (a) pyrene-d12	85.2 %	22-120							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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Environmental Laboratory Network

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CRAW00004171



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Midgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Percent Dry Weight (Solids) per Standard Methods**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
-1-24 (P1D0852-05) Soil						Sampled: 04/25/01 Received: 04/25/01			
Solids	84.6	1.00	% by Weight	1	NCA SOP	04/27/01	04/30/01	1040967	

North Creek Analytical - Portland

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North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004172



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Gasoline Hydrocarbons per NW TPA 13 Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1040917 - EPA 5030B

Blank (1040917-BLK1)				Prepared & Analyzed: 04/26/01						
Gasoline Range Hydrocarbons	ND	80.0	ug/l							
Sur: 4-BFB	49.8		"	50.0		99.6	50-150			
LCS (1040917-BS1)				Prepared & Analyzed: 04/26/01						
Gasoline Range Hydrocarbons	1280	80.0	ug/l	1250		102	70-120			
Sur: 4-BFB	59.1		"	50.0		118	50-150			
Duplicate (1040917-DUP1)				Source: P1D0849-01		Prepared & Analyzed: 04/26/01				
Gasoline Range Hydrocarbons	ND	80.0	ug/l		ND			37.6	50	
Sur: 4-BFB	51.8		"	50.0		104	50-150			

Batch 1040986 - EPA 5035

Blank (1040986-BLK1)				Prepared & Analyzed: 04/27/01						
Gasoline Range Hydrocarbons	ND	4.00	mg/kg wet							
Sur: 4-BFB	2.35		"	2.50		94.0	50-150			
LCS (1040986-BS1)				Prepared & Analyzed: 04/27/01						
Gasoline Range Hydrocarbons	72.6	4.00	mg/kg wet	62.5		116	50-150			
Sur: 4-BFB	2.74		"	2.50		110	50-150			
Duplicate (1040986-DUP1)				Source: P1D0860-01		Prepared & Analyzed: 04/27/01				
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry		ND			4.86	50	
Sur: 4-BFB	2.43		"	3.26		74.5	50-150			
Duplicate (1040986-DUP2)				Source: P1D0891-01		Prepared: 04/27/01 Analyzed: 04/28/01				
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry		ND			13.3	50	
Sur: 4-BFB	2.37		"	2.83		83.7	50-150			

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004173



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Diesel and Heavy Range Hydrocarbons by NCA (P1D0832-09) (Qual. Control)

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1040940 - EPA 3550 Fuels

##### Blank (1040940-BLK1)

Prepared & Analyzed: 04/26/01

Diesel Range Organics	ND	25.0	mg/kg wet
Heavy Oil Range Hydrocarbons	ND	50.0	"

Surr: 1-Chlorooctadecane	4.96		"	4.80	103	50-150
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##### CS (1040940-BS1)

Prepared & Analyzed: 04/26/01

Diesel Range Organics	108	25.0	mg/kg wet	129	83.7	50-150
Heavy Oil Range Hydrocarbons	72.1	50.0	"	79.0	91.3	50-150

Surr: 1-Chlorooctadecane	6.53		"	4.80	136	50-150
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##### Duplicate (1040940-DUP1)

Source: P1D0832-09

Prepared & Analyzed: 04/26/01

Diesel Range Organics	ND	25.0	mg/kg dry	ND		50
Heavy Oil Range Hydrocarbons	ND	50.0	"	ND		50

Surr: 1-Chlorooctadecane	6.54		"	6.67	98.1	50-150
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##### Duplicate (1040940-DUP2)

Source: P1D0828-01

Prepared & Analyzed: 04/26/01

Diesel Range Organics	100	25.0	mg/kg dry	102		1.98	50
Heavy Oil Range Hydrocarbons	85.9	50.0	"	91.2		5.99	50

Surr: 1-Chlorooctadecane	7.17		"	6.07	118	50-150
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#### Batch 1041032 - EPA 3510 Fuels

##### Blank (1041032-BLK1)

Prepared & Analyzed: 04/30/01

Diesel Range Organics	ND	0.250	mg/l
Heavy Oil Range Hydrocarbons	ND	0.500	"

Surr: 1-Chlorooctadecane	0.112		"	0.0960	117	50-150
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##### CS (1041032-BS1)

Prepared & Analyzed: 04/30/01

Diesel Range Organics	2.48	0.250	mg/l	2.58	96.1	50-150
Heavy Oil Range Hydrocarbons	1.45	0.500	"	1.58	91.8	50-150

Surr: 1-Chlorooctadecane	0.107		"	0.0960	111	50-150
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North Creek Analytical - Portland

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*R*

Philip Nerenberg, Laboratory Manager

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CRAW00004174



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BridgeWater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Developmental Range Hydrocarbons (EPA 3510) - Method: Similar Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1041032 - EPA 3510 Fuels

##### LCS Dup (1041032-BSD1)

Prepared & Analyzed: 04/30/01

Diesel Range Organics	2.46	0.250	mg/l	2.58	95.3	50-150	0.810	50	
Heavy Oil Range Hydrocarbons	1.44	0.500	"	1.58	91.1	50-150	0.692	50	
Surrogate: 1-Chlorooctadecane	0.108		"	0.0960	112	50-150			

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CRAW00004175



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Total Metals per EPA 6000/2000 Series Methodology Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1050143 - EPA 200/3005

##### Blank (1050143-BLK1)

Prepared & Analyzed: 05/03/01

Antimony	ND	0.00100	mg/l
Arsenic	ND	0.00100	"
Beryllium	ND	0.00100	"
Cadmium	ND	0.00100	"
Chromium	ND	0.00100	"
Copper	ND	0.00200	"
Lead	ND	0.00100	"
Nickel	ND	0.00200	"
Mercury	ND	0.00100	"
Silver	ND	0.00100	"
Thallium	ND	0.00100	"

##### BS (1050143-BS1)

Prepared: 05/03/01 Analyzed: 05/04/01

Antimony	0.0514	0.00100	mg/l	0.0500	103	80-120
Arsenic	0.106	0.00100	"	0.100	106	80-120
Beryllium	0.105	0.00100	"	0.100	105	80-120
Cadmium	0.103	0.00100	"	0.100	103	80-120
Chromium	0.102	0.00100	"	0.100	102	80-120
Copper	0.102	0.00200	"	0.100	102	80-120
Lead	0.103	0.00100	"	0.100	103	80-120
Nickel	0.103	0.00200	"	0.100	103	80-120
Mercury	0.109	0.00100	"	0.100	109	80-120
Silver	0.0525	0.00100	"	0.0500	105	80-120
Thallium	0.0525	0.00100	"	0.0500	105	80-120

##### Duplicate (1050143-DUP1)


Source: P1D0852-03

Prepared: 05/03/01 Analyzed: 05/04/01

Antimony	ND	0.00200	mg/l	ND	48.1	20	Q-06
Arsenic	0.0143	0.00200	"	0.0130	9.52	20	
Beryllium	ND	0.00200	"	ND	2.41	20	
Cadmium	ND	0.00200	"	ND		20	
Chromium	0.0372	0.00200	"	0.0383	2.91	20	
Copper	0.0488	0.00400	"	0.0519	6.16	20	
Lead	0.0176	0.00200	"	0.0181	2.80	20	
Nickel	0.0409	0.00400	"	0.0435	6.16	20	
Selenium	0.00232	0.00200	"	0.00420	57.7	20	Q-06
Silver	ND	0.00200	"	ND	63.3	20	Q-06

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CRAW00004176



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Total Metals per EPA 8000/2000 Series Methods - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
atch 1050143 - EPA 200/3005										
Duplicate (1050143-DUP1) Source: P1D0852-03 Prepared: 05/03/01 Analyzed: 05/04/01										
Thallium	ND	0.00200	mg/l	ND				43.9	20	Q-06
Matrix Spike (1050143-MS1) Source: P1D0852-03 Prepared: 05/03/01 Analyzed: 05/08/01										
Antimony	0.0611	0.00200	mg/l	0.100	ND	60.1	75-125			Q-02
Arsenic	0.245	0.0315	"	0.200	ND	116	75-125			
Beryllium	0.213	0.00200	"	0.200	ND	106	75-125			
Cadmium	0.204	0.00200	"	0.200	ND	102	75-125			
Chromium	0.242	0.00200	"	0.200	0.0383	102	75-125			
Copper	0.258	0.00400	"	0.200	0.0519	103	75-125			
Lead	0.203	0.00200	"	0.200	0.0181	92.4	75-125			
Nickel	0.246	0.00400	"	0.200	0.0435	101	75-125			
Selenium	0.248	0.0313	"	0.200	ND	122	75-125			
Silver	0.107	0.00200	"	0.100	ND	106	75-125			
Thallium	0.0947	0.00200	"	0.100	ND	94.2	75-125			
Matrix Spike (1050143-MS2) Source: P1D0950-01 Prepared: 05/03/01 Analyzed: 05/04/01										
Antimony	0.0542	0.00100	mg/l	0.0500	0.00278	103	75-125			
Arsenic	0.0957	0.0140	"	0.100	ND	89.4	75-125			
Beryllium	0.106	0.00100	"	0.100	ND	106	75-125			
Cadmium	0.103	0.00100	"	0.100	ND	102	75-125			
Chromium	0.103	0.00100	"	0.100	0.00446	98.5	75-125			
Copper	0.128	0.00200	"	0.100	0.0276	100	75-125			
Lead	0.0998	0.00100	"	0.100	0.00315	96.6	75-125			
Nickel	0.112	0.00200	"	0.100	0.0147	97.3	75-125			
Selenium	0.105	0.00100	"	0.100	ND	105	75-125			
Silver	0.0466	0.00100	"	0.0500	ND	92.6	75-125			
Thallium	0.0492	0.00100	"	0.0500	ND	98.4	75-125			

North Creek Analytical - Portland

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William Nerenberg, Laboratory Manager

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CRAW00004177



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Final Method: EPA 8000/7000 Series Methods Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1050158 - EPA 7470</b>									
<b>Blank (1050158-BLK1)</b>					Prepared & Analyzed: 05/04/01				
Mercury	ND	0.000200	mg/l						
<b>BS (1050158-BS1)</b>					Prepared & Analyzed: 05/04/01				
Mercury	0.00536	0.000200	mg/l	0.00500		107 80-120			
<b>Duplicate (1050158-DUP1)</b>					Source: P1D0862-01 Prepared & Analyzed: 05/04/01				
Mercury	0.000588	0.000200	mg/l	ND			160	20	Q-06
<b>Matrix Spike (1050158-MS1)</b>					Source: P1D0862-01 Prepared & Analyzed: 05/04/01				
Mercury	0.00513	0.000200	mg/l	0.00500	ND	101 75-125			
<b>Matrix Spike (1050158-MS2)</b>					Source: P1D0901-01 Prepared & Analyzed: 05/04/01				
Mercury	0.00495	0.000200	mg/l	0.00500	ND	99.0 75-125			
<b>Batch 1050417 - EPA 200/3005</b>									
<b>Blank (1050417-BLK1)</b>					Prepared: 05/07/01 Analyzed: 05/08/01				
Cd	ND	0.00500	mg/l						
<b>LCS (1050417-BS1)</b>					Prepared: 05/07/01 Analyzed: 05/08/01				
Cd	0.101	0.00500	mg/l	0.100		101 80-120			
<b>Duplicate (1050417-DUP1)</b>					Source: P1D0852-03 Prepared: 05/07/01 Analyzed: 05/08/01				
Zinc	0.118	0.0100	mg/l	0.123			4.15	20	
<b>Matrix Spike (1050417-MS1)</b>					Source: P1D0852-03 Prepared: 05/07/01 Analyzed: 05/08/01				
Zinc	0.325	0.0100	mg/l	0.200	0.123	101 75-125			

North Creek Analytical - Portland

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CRAW00004178



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Total Metals per EPA 600/4-91-010 Series Methods - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### atch 1050417 - EPA 200/3005

Matrix Spike (1050417-MS2)	Source: P1D0950-01			Prepared: 05/07/01		Analyzed: 05/08/01				
7inc	0.168	0.00500	mg/l	0.100	0.0647	103	75-125			

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CRAW00004179



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Dissolved Metals - EPA 200/3005 Diss - Without Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1050159 - EPA 7470

##### Blank (1050159-BLK1)

Prepared & Analyzed: 05/04/01

Mercury ND 0.000200 mg/l

##### CS (1050159-BS1)

Prepared & Analyzed: 05/04/01

Mercury 0.00473 0.000200 mg/l 0.00500 94.6 80-120

##### Duplicate (1050159-DUP1)

Source: P1D0901-01

Prepared & Analyzed: 05/04/01

Mercury ND 0.000200 mg/l ND 20

##### Matrix Spike (1050159-MS1)

Source: P1D0901-01

Prepared & Analyzed: 05/04/01

Mercury 0.00480 0.000200 mg/l 0.00500 ND 96.0 75-125

#### Batch 1050207 - EPA 200/3005 Diss

##### Blank (1050207-BLK1)

Prepared: 05/04/01 Analyzed: 05/08/01

Antimony	ND	0.00100	mg/l
Arsenic	ND	0.00100	"
Beryllium	ND	0.00100	"
Cadmium	ND	0.00100	"
Chromium	ND	0.00100	"
Copper	ND	0.00200	"
Lead	ND	0.00100	"
Nickel	ND	0.00200	"
Selenium	ND	0.00100	"
Silver	ND	0.00100	"
Thallium	ND	0.00100	"
Zinc	ND	0.00500	"

North Creek Analytical - Portland

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CRAW00004180



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**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
 541.383.9310 fax 541.382.7588

Ridgewater Group 4500 Kruse Way Suite 110 Lake Oswego, OR 97035	Project: Crawford St. Project Number: na Project Manager: Ross Rieke	Reported: 05/21/01 15:38
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Dissolved Metals per EPA 8000/3005 Series Method - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1050207 - EPA 200/3005 Diss

LCS (1050207-BS1)				Prepared: 05/04/01 Analyzed: 05/08/01						
Antimony	0.0487	0.00100	mg/l	0.0500		97.4	80-120			
Asenic	0.0984	0.00100	"	0.100		98.4	80-120			
Beryllium	0.0997	0.00100	"	0.100		99.7	80-120			
Cadmium	0.0980	0.00100	"	0.100		98.0	80-120			
Chromium	0.0926	0.00100	"	0.100		92.6	80-120			
Copper	0.0925	0.00200	"	0.100		92.5	80-120			
Lead	0.0958	0.00100	"	0.100		95.8	80-120			
Nickel	0.0971	0.00200	"	0.100		97.1	80-120			
Mercury	0.101	0.00100	"	0.100		101	85-115			
Silver	0.0442	0.00100	"	0.0500		88.4	80-120			
Thallium	0.0499	0.00100	"	0.0500		99.8	80-120			
Zinc	0.0998	0.00500	"	0.100		99.8	80-120			

Duplicate (1050207-DUP1)				Source: PID0901-01		Prepared: 05/04/01 Analyzed: 05/08/01				
Antimony	ND	0.00100	mg/l	ND				17.7	20	
Asenic	0.00143	0.00100	"	0.00129				10.3	20	
Beryllium	ND	0.00100	"	ND					20	
Cadmium	ND	0.00100	"	ND					20	
Chromium	ND	0.00100	"	ND				16.4	20	
Copper	ND	0.00200	"	ND				1.50	20	
Lead	ND	0.00100	"	ND					20	
Nickel	ND	0.00200	"	ND				23.7	20	Q-06
Mercury	ND	0.00100	"	ND				11.0	20	
Silver	ND	0.00100	"	ND					20	
Thallium	ND	0.00100	"	ND					20	
Zinc	0.00711	0.00500	"	0.00962				30.0	20	Q-06

Matrix Spike (1050207-MS1)				Source: PID0901-01		Prepared: 05/04/01 Analyzed: 05/08/01				
Antimony	0.0515	0.00100	mg/l	0.0500	ND	102	75-125			
Asenic	0.106	0.00100	"	0.100	0.00129	105	75-125			
Beryllium	0.101	0.00100	"	0.100	ND	101	75-125			
Cadmium	0.102	0.00100	"	0.100	ND	102	75-125			
Chromium	0.0964	0.00100	"	0.100	ND	96.1	75-125			
Copper	0.0979	0.00200	"	0.100	ND	96.6	75-125			
Lead	0.0952	0.00100	"	0.100	ND	95.2	75-125			
Nickel	0.0994	0.00200	"	0.100	ND	99.0	75-125			

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CRAW00004181



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Disputed Methodology - EPA 80007-000 Source Methodology Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1050207 - EPA 200/3005 Diss</b>										
<b>Matrix Spike (1050207-MS1)</b>		<b>Source: P1D0901-01</b>		<b>Prepared: 05/04/01</b>		<b>Analyzed: 05/08/01</b>				
Selenium	0.104	0.00100	mg/l	0.100	ND	103	75-125			
Silver	0.0448	0.00100	"	0.0500	ND	89.6	75-125			
Thallium	0.0481	0.00100	"	0.0500	ND	96.1	75-125			
Zinc	0.109	0.00500	"	0.100	0.00962	99.4	75-125			
<b>Matrix Spike (1050207-MS2)</b>		<b>Source: P1D0903-01</b>		<b>Prepared: 05/04/01</b>		<b>Analyzed: 05/08/01</b>				
Antimony	0.0499	0.00100	mg/l	0.0500	ND	99.3	75-125			
Arsenic	0.103	0.00100	"	0.100	0.00116	102	75-125			
Beryllium	0.108	0.00100	"	0.100	ND	108	75-125			
Cadmium	0.0990	0.00100	"	0.100	ND	99.0	75-125			
Chromium	0.0928	0.00100	"	0.100	0.00131	91.5	75-125			
Copper	0.0932	0.00200	"	0.100	ND	92.2	75-125			
Lead	0.0958	0.00100	"	0.100	ND	95.8	75-125			
Nickel	0.0968	0.00200	"	0.100	ND	95.2	75-125			
Selenium	0.102	0.00100	"	0.100	ND	101	75-125			
Silver	0.0424	0.00100	"	0.0500	ND	84.8	75-125			
Thallium	0.0474	0.00100	"	0.0500	ND	94.8	75-125			
Zinc	0.0999	0.00500	"	0.100	ND	97.2	75-125			

North Creek Analytical - Portland

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CRAW00004182



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541.383.9310 fax 541.382.7588

ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B - Quality Control**

**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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atch 1040947 - EPA 5035

Blank (1040947-BLK1)

Prepared: 04/26/01 Analyzed: 04/30/01

Acetone	ND	1000	ug/kg wet
Azene	ND	100	"
Bromobenzene	ND	100	"
Bromochloromethane	ND	100	"
bromodichloromethane	ND	100	"
bromoform	ND	100	"
Bromomethane	ND	500	"
Butanone	ND	1000	"
Butylbenzene	ND	500	"
sec-Butylbenzene	ND	100	"
tert-Butylbenzene	ND	100	"
Carbon disulfide	ND	1000	"
Carbon tetrachloride	ND	100	"
Chlorobenzene	ND	100	"
chloroethane	ND	100	"
chloroform	ND	100	"
Chloromethane	ND	500	"
Chlorotoluene	ND	100	"
Chlorotoluene	ND	100	"
1,2-Dibromo-3-chloropropane	ND	500	"
Dibromochloromethane	ND	100	"
2-Dibromoethane	ND	100	"
Dibromomethane	ND	100	"
1,2-Dichlorobenzene	ND	100	"
3-Dichlorobenzene	ND	100	"
4-Dichlorobenzene	ND	100	"
Dichlorodifluoromethane	ND	500	"
1,1-Dichloroethane	ND	100	"
2-Dichloroethane	ND	100	"
1,1-Dichloroethene	ND	100	"
cis-1,2-Dichloroethene	ND	100	"
trans-1,2-Dichloroethene	ND	100	"
2-Dichloropropane	ND	100	"
1,3-Dichloropropane	ND	100	"
2-Dichloropropane	ND	100	"
1-Dichloropropene	ND	100	"

North Creek Analytical - Portland

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CRAW00004183



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**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
 541.383.8310 fax 541.382.7588

Tidewater Group  
 4500 Kruse Way Suite 110  
 Lake Oswego, OR 97035

Project: Crawford St.  
 Project Number: na  
 Project Manager: Ross Rieke

Reported:  
 05/21/01 15:38

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1040947 - EPA 5035										
Blank (1040947-BLK1) Prepared: 04/26/01 Analyzed: 04/30/01										
1,3-Dichloropropene	ND	100	ug/kg wet							
trans-1,3-Dichloropropene	ND	100	"							
1,4-Dimethylbenzene	ND	100	"							
Hexachlorobutadiene	ND	200	"							
Hexanone	ND	1000	"							
propylbenzene	ND	200	"							
p-Isopropyltoluene	ND	200	"							
Methyl-2-pentanone	ND	500	"							
ethyl tert-butyl ether	ND	100	"							
Methylene chloride	ND	500	"							
Naphthalene	ND	200	"							
propylbenzene	ND	100	"							
styrene	ND	100	"							
1,1,1,2-Tetrachloroethane	ND	100	"							
1,2,2-Tetrachloroethane	ND	100	"							
trichloroethene	ND	100	"							
Toluene	ND	100	"							
1,2,3-Trichlorobenzene	ND	100	"							
2,4-Trichlorobenzene	ND	100	"							
1,1,1-Trichloroethane	ND	100	"							
1,1,2-Trichloroethane	ND	100	"							
trichloroethene	ND	100	"							
trichlorofluoromethane	ND	100	"							
1,2,3-Trichloropropane	ND	100	"							
2,4-Trimethylbenzene	ND	100	"							
3,5-Trimethylbenzene	ND	100	"							
Vinyl chloride	ND	100	"							
m-Xylene	ND	100	"							
p-Xylene	ND	200	"							
Surr: 4-BFB	2320		"	2000		116	70-130			
Surr: 1,2-DCA-d4	2640		"	2000		132	70-130			S-08
Surr: Dibromofluoromethane	2420		"	2000		121	70-130			
Surr: Toluene-d8	2620		"	2000		131	70-130			S-08

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004184



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1040947 - EPA 5035

LCS (1040947-BS1)

Prepared: 04/26/01 Analyzed: 04/29/01

Benzene	2460	100	ug/kg wet	2500		98.4	80-135			
Chlorobenzene	2460	100	"	2500		98.4	80-135			
1,1-Dichloroethene	2190	100	"	2500		87.6	60-150			
Toluene	2590	100	"	2500		104	80-130			
1,1-Dichloroethene	2160	100	"	2500		86.4	70-135			
Surr: 4-BFB	2260		"	2000		113	70-130			
Surr: 1,2-DCA-d4	2550		"	2000		128	70-130			
Surr: Dibromofluoromethane	2360		"	2000		118	70-130			
Surr: Toluene-d8	2530		"	2000		126	70-130			

Matrix Spike (1040947-MS1)

Source: P1D0531-02

Prepared: 04/26/01 Analyzed: 04/30/01

Benzene	2720	100	ug/kg dry	3190	ND	85.3	60-135			
Chlorobenzene	2870	100	"	3190	ND	90.0	65-125			
1,1-Dichloroethene	2060	100	"	3190	ND	64.6	60-135			
Toluene	2950	100	"	3190	ND	92.5	60-125			
1,1-Dichloroethene	2440	100	"	3190	ND	76.5	60-125			
Surr: 4-BFB	2680		"	2550		105	70-130			
Surr: 1,2-DCA-d4	2890		"	2550		113	70-130			
Surr: Dibromofluoromethane	2690		"	2550		105	70-130			
Surr: Toluene-d8	2860		"	2550		112	70-130			

Matrix Spike Dup (1040947-MSD1)

Source: P1D0531-02

Prepared: 04/26/01 Analyzed: 04/30/01

Benzene	2640	100	ug/kg dry	3190	ND	82.8	60-135	2.99	25	
Chlorobenzene	2910	100	"	3190	ND	91.2	65-125	1.38	25	
1,1-Dichloroethene	1850	100	"	3190	ND	58.0	60-135	10.7	25	Q-01
Toluene	2920	100	"	3190	ND	91.5	60-125	1.02	25	
1,1-Dichloroethene	2370	100	"	3190	ND	74.3	60-125	2.91	25	
Surr: 4-BFB	2670		"	2550		105	70-130			
Surr: 1,2-DCA-d4	2900		"	2550		114	70-130			
Surr: Dibromofluoromethane	2800		"	2550		110	70-130			
Surr: Toluene-d8	2920		"	2550		115	70-130			

North Creek Analytical - Portland

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CRAW00004185



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B - Quality Control**

**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>atch 1040970 - EPA 5030B</b>										
<b>Blank (1040970-BLK1)</b>				<b>Prepared &amp; Analyzed: 04/27/01</b>						
Acetone	ND	10.0	ug/l							
Benzene	ND	1.00	"							
Bromobenzene	ND	1.00	"							
Bromochloromethane	ND	1.00	"							
Bromodichloromethane	ND	1.00	"							
Bromoform	ND	1.00	"							
Bromomethane	ND	5.00	"							
Butanone	ND	10.0	"							
Butylbenzene	ND	5.00	"							
sec-Butylbenzene	ND	1.00	"							
tert-Butylbenzene	ND	1.00	"							
Carbon disulfide	ND	10.0	"							
Carbon tetrachloride	ND	1.00	"							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	1.00	"							
Chloromethane	ND	5.00	"							
Chlorotoluene	ND	1.00	"							
Chlorotoluene	ND	1.00	"							
1,2-Dibromo-3-chloropropane	ND	5.00	"							
Dibromochloromethane	ND	1.00	"							
2-Dibromoethane	ND	1.00	"							
Dibromomethane	ND	1.00	"							
1,2-Dichlorobenzene	ND	1.00	"							
3-Dichlorobenzene	ND	1.00	"							
4-Dichlorobenzene	ND	1.00	"							
Dichlorodifluoromethane	ND	5.00	"							
1,1-Dichloroethane	ND	1.00	"							
2-Dichloroethane	ND	1.00	"							
1,1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
2-Dichloropropane	ND	1.00	"							
1,3-Dichloropropane	ND	1.00	"							
2-Dichloropropane	ND	1.00	"							
1-Dichloropropene	ND	1.00	"							

North Creek Analytical - Portland

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CRAW00004186



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idgewater Group  
4500 Kruse Way Suite 110  
ake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Volatile Organic Compounds and EPA Method 8210B - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
tch 1040970 - EPA 5030B										
Blank (1040970-BLK1)				Prepared & Analyzed: 04/27/01						
cis-1,3-Dichloropropene	ND	1.00	ug/l							
trans-1,3-Dichloropropene	ND	1.00	"							
1,2-Dichlorobenzene	ND	1.00	"							
Hexachlorobutadiene	ND	2.00	"							
1,2-Dichloroethane	ND	10.0	"							
propylbenzene	ND	2.00	"							
p-Isopropyltoluene	ND	2.00	"							
2-Methyl-2-pentanone	ND	5.00	"							
tert-butyl tert-butyl ether	ND	1.00	"							
Methylene chloride	ND	5.00	"							
Naphthalene	ND	2.00	"							
propylbenzene	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1,1,1,2-Tetrachloroethane	ND	1.00	"							
1,2,2,2-Tetrachloroethane	ND	1.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Toluene	ND	1.00	"							
1,2,3-Trichlorobenzene	ND	1.00	"							
1,2,4-Trichlorobenzene	ND	1.00	"							
1,1,1-Trichloroethane	ND	1.00	"							
1,1,2-Trichloroethane	ND	1.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
1,2,3-Trichloropropane	ND	1.00	"							
1,2,4-Trimethylbenzene	ND	1.00	"							
1,3,5-Trimethylbenzene	ND	1.00	"							
Vinyl chloride	ND	1.00	"							
m-Xylene	ND	1.00	"							
p-Xylene	ND	2.00	"							
Surr: 4-BFB	18.6		"	20.0		93.0	75-125			
Surr: 1,2-DCA-d4	19.8		"	20.0		99.0	75-125			
Surr: Dibromofluoromethane	18.6		"	20.0		93.0	75-125			
Surr: Toluene-d8	19.5		"	20.0		97.5	75-125			

North Creek Analytical - Portland

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CRAW00004187



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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tch 1040970 - EPA 5030B

LCS (1040970-BS1)

Prepared & Analyzed: 04/27/01

Benzene	20.9	1.00	ug/l	20.0		104	80-125			
Bromobenzene	19.2	1.00	"	20.0		96.0	80-125			
1,1-Dichloroethene	19.7	1.00	"	20.0		98.5	70-135			
Toluene	20.0	1.00	"	20.0		100	80-125			
1,2-Dichloroethene	18.0	1.00	"	20.0		90.0	70-130			
Surr: 4-BFB	19.0		"	20.0		95.0	75-125			
Surr: 1,2-DCA-d4	19.8		"	20.0		99.0	75-125			
Surr: Dibromofluoromethane	19.3		"	20.0		96.5	75-125			
Surr: Toluene-d8	19.5		"	20.0		97.5	75-125			

LCS Dup (1040970-BSD1)

Prepared & Analyzed: 04/27/01

Benzene	20.8	1.00	ug/l	20.0		104	80-125	0.480	25	
Bromobenzene	19.2	1.00	"	20.0		96.0	80-125	0.00	25	
1,1-Dichloroethene	19.5	1.00	"	20.0		97.5	70-135	1.02	25	
Toluene	20.3	1.00	"	20.0		102	80-125	1.49	25	
1,2-Dichloroethene	18.0	1.00	"	20.0		90.0	70-130	0.00	25	
Surr: 4-BFB	18.9		"	20.0		94.5	75-125			
Surr: 1,2-DCA-d4	19.6		"	20.0		98.0	75-125			
Surr: Dibromofluoromethane	18.9		"	20.0		94.5	75-125			
Surr: Toluene-d8	19.5		"	20.0		97.5	75-125			

Batch 1040971 - EPA 5030B

Blank (1040971-BLK1)

Prepared & Analyzed: 04/27/01

Acetone	ND	10.0	ug/l							
Benzene	ND	1.00	"							
Bromobenzene	ND	1.00	"							
Bromochloromethane	ND	1.00	"							
Bromodichloromethane	ND	1.00	"							
Bromoform	ND	1.00	"							
Bromomethane	ND	5.00	"							
2-Butanone	ND	10.0	"							
3-Butylbenzene	ND	5.00	"							
4-Butylbenzene	ND	1.00	"							
tert-Butylbenzene	ND	1.00	"							
Carbon disulfide	ND	10.0	"							

North Creek Analytical - Portland

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CRAW00004188



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B - Quality Control**

**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1040971 - EPA 5030B</b>										
<b>Blank (1040971-BLK1)</b>				Prepared & Analyzed: 04/27/01						
Carbon tetrachloride	ND	1.00	ug/l							
Chlorobenzene	ND	1.00	"							
Chloroethane	ND	1.00	"							
Chloroform	ND	1.00	"							
Chloromethane	ND	5.00	"							
Chlorotoluene	ND	1.00	"							
4-Chlorotoluene	ND	1.00	"							
2-Dibromo-3-chloropropane	ND	5.00	"							
bromochloromethane	ND	1.00	"							
1,2-Dibromoethane	ND	1.00	"							
Dibromomethane	ND	1.00	"							
2-Dichlorobenzene	ND	1.00	"							
1,3-Dichlorobenzene	ND	1.00	"							
1,4-Dichlorobenzene	ND	1.00	"							
1,1,1-Trichlorodifluoromethane	ND	5.00	"							
1-Dichloroethane	ND	1.00	"							
1,2-Dichloroethane	ND	1.00	"							
1-Dichloroethene	ND	1.00	"							
cis-1,2-Dichloroethene	ND	1.00	"							
trans-1,2-Dichloroethene	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
2,3-Dichloropropane	ND	1.00	"							
1,2-Dichloropropane	ND	1.00	"							
1,1-Dichloropropene	ND	1.00	"							
cis-1,3-Dichloropropene	ND	1.00	"							
trans-1,3-Dichloropropene	ND	1.00	"							
Ethylbenzene	ND	1.00	"							
1,2-Dichlorobutadiene	ND	2.00	"							
2-Hexanone	ND	10.0	"							
Isopropylbenzene	ND	2.00	"							
p-Isopropyltoluene	ND	2.00	"							
2-Methyl-2-pentanone	ND	5.00	"							
1-Methyl tert-butyl ether	ND	1.00	"							
Methylene chloride	ND	5.00	"							
1,2-Dichlorobenzene	ND	2.00	"							
1-Propylbenzene	ND	1.00	"							

North Creek Analytical - Portland

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CRAW00004189



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541.383 9310 fax 541 382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

**Volatile Organic Compounds per EPA Method 8260B - Quality Control**

**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1040971 - EPA 5030B**

**Blank (1040971-BLK1)**

Prepared & Analyzed: 04/27/01

Styrene	ND	1.00	ug/l							
1,1,2-Tetrachloroethane	ND	1.00	"							
1,1,2,2-Tetrachloroethane	ND	1.00	"							
Tetrachloroethene	ND	1.00	"							
Benzene	ND	1.00	"							
1,2,3-Trichlorobenzene	ND	1.00	"							
1,2,4-Trichlorobenzene	ND	1.00	"							
1,1-Trichloroethane	ND	1.00	"							
1,2-Trichloroethane	ND	1.00	"							
Trichloroethene	ND	1.00	"							
Trichlorofluoromethane	ND	1.00	"							
1,2,3-Trichloropropane	ND	1.00	"							
1,2,4-Trimethylbenzene	ND	1.00	"							
1,3,5-Trimethylbenzene	ND	1.00	"							
vinyl chloride	ND	1.00	"							
Xylene	ND	1.00	"							
m,p-Xylene	ND	2.00	"							
Surr: 4-BFB	18.8		"	20.0		94.0	75-125			
Surr: 1,2-DCA-d4	18.9		"	20.0		94.5	75-125			
Surr: Dibromofluoromethane	18.4		"	20.0		92.0	75-125			
Surr: Toluene-d8	19.2		"	20.0		96.0	75-125			

**CS (1040971-BS1)**

Prepared & Analyzed: 04/27/01

Benzene	19.9	1.00	ug/l	20.0		99.5	80-125			
Chlorobenzene	19.9	1.00	"	20.0		99.5	80-125			
1-Dichloroethene	20.0	1.00	"	20.0		100	70-135			
Toluene	19.8	1.00	"	20.0		99.0	80-125			
Trichloroethene	18.9	1.00	"	20.0		94.5	70-130			
Surr: 4-BFB	19.2		"	20.0		96.0	75-125			
Surr: 1,2-DCA-d4	19.0		"	20.0		95.0	75-125			
Surr: Dibromofluoromethane	19.0		"	20.0		95.0	75-125			
Surr: Toluene-d8	19.1		"	20.0		95.5	75-125			

North Creek Analytical - Portland

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CRAW00004190



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Semivolatile Organic Compounds per EPA Method 8270C - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1050031 - EPA 3510/600 Series										
Blank (1050031-BLK1)				Prepared: 05/01/01 Analyzed: 05/08/01						
Acenaphthene	ND	5.00	ug/l							
Acenaphthylene	ND	5.00	"							
Anthracene	ND	5.00	"							
Benzo (a) anthracene	ND	5.00	"							
Benzo (a) pyrene	ND	5.00	"							
Benzo (b) fluoranthene	ND	5.00	"							
Benzo (ghi) perylene	ND	5.00	"							
Benzo (k) fluoranthene	ND	5.00	"							
Benzoic Acid	ND	50.0	"							
Benzyl alcohol	ND	10.0	"							
4-Bromophenyl phenyl ether	ND	5.00	"							
Butyl benzyl phthalate	ND	5.00	"							
2-Chloro-3-methylphenol	ND	5.00	"							
4-Chloroaniline	ND	20.0	"							
1,2-bis(2-chloroethoxy)ethane	ND	10.0	"							
1,2-bis(2-chloroethyl)ether	ND	5.00	"							
Bis(2-chloroisopropyl)ether	ND	10.0	"							
2-Chloronaphthalene	ND	5.00	"							
2-Chlorophenol	ND	5.00	"							
4-Chlorophenyl phenyl ether	ND	5.00	"							
Chrysene	ND	5.00	"							
Di-n-butyl phthalate	ND	5.00	"							
Di-n-octyl phthalate	ND	5.00	"							
Dibenzo (a,h) anthracene	ND	5.00	"							
Dibenzofuran	ND	5.00	"							
1,2-Dichlorobenzene	ND	5.00	"							
1,3-Dichlorobenzene	ND	5.00	"							
1,4-Dichlorobenzene	ND	5.00	"							
1,3'-Dichlorobenzidine	ND	5.00	"							
2,4-Dichlorophenol	ND	5.00	"							
Diethyl phthalate	ND	5.00	"							
1,4-Dimethylphenol	ND	10.0	"							
Dimethyl phthalate	ND	5.00	"							
4,6-Dinitro-2-methylphenol	ND	10.0	"							
2,4-Dinitrophenol	ND	25.0	"							
2,4-Dinitrotoluene	ND	5.00	"							

North Creek Analytical - Portland

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CRAW00004191



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Semi-Volatile Organic Compounds, Part 1, Method 8210, Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
atch 1050031 - EPA 3510/600 Series										
Blank (1050031-BLK1)				Prepared: 05/01/01 Analyzed: 05/08/01						
2,6-Dinitrotoluene	ND	5.00	ug/l							
Diethylhexylphthalate	ND	10.0	"							
Dibenzofuran	ND	5.00	"							
Fluorene	ND	5.00	"							
Hexachlorobenzene	ND	5.00	"							
Hexachlorobutadiene	ND	10.0	"							
Hexachlorocyclopentadiene	ND	10.0	"							
Hexachloroethane	ND	10.0	"							
Indeno (1,2,3-cd) pyrene	ND	5.00	"							
Isophorone	ND	5.00	"							
2-Methylnaphthalene	ND	5.00	"							
Methylphenol	ND	10.0	"							
4-Methylphenol	ND	5.00	"							
Naphthalene	ND	5.00	"							
2-Nitroaniline	ND	5.00	"							
3-Nitroaniline	ND	10.0	"							
4-Nitroaniline	ND	10.0	"							
Nitrobenzene	ND	5.00	"							
2-Nitrophenol	ND	5.00	"							
3-Nitrophenol	ND	25.0	"							
N-Nitrosodi-n-propylamine	ND	10.0	"							
N-Nitrosodiphenylamine	ND	5.00	"							
2,4-Dichlorophenol	ND	10.0	"							
Phenanthrene	ND	5.00	"							
Phenol	ND	5.00	"							
Pyrene	ND	5.00	"							
1,2,4-Trichlorobenzene	ND	5.00	"							
2,4,5-Trichlorophenol	ND	5.00	"							
2,4,6-Trichlorophenol	ND	5.00	"							
Surr: 2-Fluorobiphenyl	42.6		"	75.0		56.8	26-135			
Surr: 2-Fluorophenol	79.5		"	150		53.0	6-124			
Surr: Nitrobenzene-d5	69.4		"	75.0		92.5	23-147			
Surr: Phenol-d6	52.3		"	150		34.9	11-130			
Surr: p-Terphenyl-d14	84.1		"	75.0		112	38-149			
Surr: 2,4,6-Tribromophenol	189		"	150		126	19-126			

North Creek Analytical - Portland

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CRAW00004192



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Ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Sample: Organic Compound Spec. EPA Method 8270A, Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### tch 1050031 - EPA 3510/600 Series

LCS (1050031-BS1)				Prepared: 05/01/01		Analyzed: 05/08/01				
Acenaphthene	47.2	5.00	ug/l	75.0		62.9	40-110			
1-Chloro-3-methylphenol	112	5.00	"	150		74.7	40-110			
1-Chlorophenol	102	5.00	"	150		68.0	40-110			
1,4-Dichlorobenzene	28.4	5.00	"	75.0		37.9	20-90			
2,4-Dinitrotoluene	50.2	5.00	"	75.0		66.9	50-110			
1-Nitrophenol	43.4	25.0	"	150		28.9	15-100			
N-Nitrosodi-n-propylamine	48.2	10.0	"	75.0		64.3	40-110			
1-Pentachlorophenol	139	10.0	"	150		92.7	30-120			
Phenol	40.8	5.00	"	150		27.2	15-110			
Pyrene	45.2	5.00	"	75.0		60.3	40-110			
1,2,4-Trichlorobenzene	31.2	5.00	"	75.0		41.6	25-100			
Surr: 2-Fluorobiphenyl	41.4		"	75.0		55.2	26-135			
Surr: 2-Fluorophenol	65.6		"	150		43.7	6-124			
Surr: Nitrobenzene-d5	62.0		"	75.0		82.7	23-147			
Surr: Phenol-d6	42.4		"	150		28.3	11-130			
Surr: p-Terphenyl-d14	72.8		"	75.0		97.1	38-149			
Surr: 2,4,6-Tribromophenol	160		"	150		107	19-126			

CS Dup (1050031-BSD1)				Prepared: 05/01/01		Analyzed: 05/08/01				
Acenaphthene	50.8	5.00	ug/l	75.0		67.7	40-110	7.35	25	
1-Chloro-3-methylphenol	125	5.00	"	150		83.3	40-110	11.0	25	
1-Chlorophenol	112	5.00	"	150		74.7	40-110	9.35	25	
1,4-Dichlorobenzene	32.4	5.00	"	75.0		43.2	20-90	13.2	35	
2,4-Dinitrotoluene	57.8	5.00	"	75.0		77.1	50-110	14.1	25	
1-Nitrophenol	51.6	25.0	"	150		34.4	15-100	17.3	35	
N-Nitrosodi-n-propylamine	53.6	10.0	"	75.0		71.5	40-110	10.6	30	
1-Pentachlorophenol	140	10.0	"	150		93.3	30-120	0.717	30	
Phenol	48.2	5.00	"	150		32.1	15-110	16.6	30	
Pyrene	50.7	5.00	"	75.0		67.6	40-110	11.5	25	
1,2,4-Trichlorobenzene	34.9	5.00	"	75.0		46.5	25-100	11.2	30	
Surr: 2-Fluorobiphenyl	34.8		"	75.0		46.4	26-135			
Surr: 2-Fluorophenol	72.7		"	150		48.5	6-124			
Surr: Nitrobenzene-d5	52.4		"	75.0		69.9	23-147			
Surr: Phenol-d6	44.0		"	150		29.3	11-130			
Surr: p-Terphenyl-d14	67.5		"	75.0		90.0	38-149			
Surr: 2,4,6-Tribromophenol	146		"	150		97.3	19-126			

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CRAW00004193



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Semivolatile Organic Compounds per EPA Method 8210 - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 1050031 - EPA 3510/600 Series

Batch 1050283 - EPA 3550

Blank (1050283-BLK1)

Prepared: 05/07/01 Analyzed: 05/09/01

acenaphthene	ND	0.330	mg/kg wet
Acenaphthylene	ND	0.330	"
Anthracene	ND	0.330	"
Benzo (a) anthracene	ND	0.330	"
Benzo (a) pyrene	ND	0.330	"
Benzo (b) fluoranthene	ND	0.330	"
Benzo (ghi) perylene	ND	0.330	"
Benzo (k) fluoranthene	ND	0.330	"
Benzoic Acid	ND	1.00	"
Benzyl alcohol	ND	0.330	"
Bromophenyl phenyl ether	ND	0.330	"
Butyl benzyl phthalate	ND	0.330	"
4-Chloro-3-methylphenol	ND	0.330	"
Chloroaniline	ND	2.00	"
1,2-bis(2-chloroethoxy)methane	ND	0.330	"
Bis(2-chloroethyl)ether	ND	0.330	"
1,2-bis(2-chloroisopropyl)ether	ND	0.330	"
Chloronaphthalene	ND	0.330	"
2-Chlorophenol	ND	0.330	"
Chlorophenyl phenyl ether	ND	0.330	"
Chrysene	ND	0.330	"
Di-n-butyl phthalate	ND	1.00	"
Di-n-octyl phthalate	ND	0.330	"
Dibenz (a,h) anthracene	ND	0.330	"
Dibenzofuran	ND	0.330	"
1,2-Dichlorobenzene	ND	1.00	"
1,3-Dichlorobenzene	ND	1.00	"
1,4-Dichlorobenzene	ND	1.00	"
3,3'-Dichlorobenzidine	ND	1.00	"
1,4-Dichlorophenol	ND	0.330	"
Diethyl phthalate	ND	0.330	"
2,4-Dimethylphenol	ND	1.00	"
Dimethyl phthalate	ND	0.330	"
2,6-Dinitro-2-methylphenol	ND	1.00	"

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CRAW00004194



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Semivolatile Organic Compounds per EPA Method 8270C - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
atch 1050283 - EPA 3550										
Blank (1050283-BLK1)										
				Prepared: 05/07/01 Analyzed: 05/09/01						
2,4-Dinitrophenol	ND	2.00	mg/kg wet							
4-Dinitrotoluene	ND	0.500	"							
2,6-Dinitrotoluene	ND	0.500	"							
Bis(2-ethylhexyl)phthalate	ND	2.00	"							
fluoranthene	ND	0.330	"							
fluorene	ND	0.330	"							
Hexachlorobenzene	ND	0.330	"							
Hexachlorobutadiene	ND	1.00	"							
Hexachlorocyclopentadiene	ND	1.00	"							
Hexachloroethane	ND	1.00	"							
Indeno (1,2,3-cd) pyrene	ND	0.330	"							
isophorone	ND	0.330	"							
1-Methylnaphthalene	ND	0.330	"							
2-Methylphenol	ND	0.330	"							
2,4-Methylphenol	ND	0.330	"							
1-naphthalene	ND	0.330	"							
2-Nitroaniline	ND	0.330	"							
3-Nitroaniline	ND	1.00	"							
4-Nitroaniline	ND	0.330	"							
1-Nitrobenzene	ND	0.330	"							
2-Nitrophenol	ND	0.330	"							
3-Nitrophenol	ND	1.00	"							
1-Nitrosodi-n-propylamine	ND	0.330	"							
N-Nitrosodiphenylamine	ND	0.330	"							
1-pentachlorophenol	ND	1.00	"							
1-phenanthrene	ND	0.330	"							
Phenol	ND	0.330	"							
Pyrene	ND	0.330	"							
1,2,4-Trichlorobenzene	ND	0.330	"							
2,4,5-Trichlorophenol	ND	0.330	"							
2,4,6-Trichlorophenol	ND	0.330	"							
Surr: 2-Fluorobiphenyl	2.04		"	2.50		81.6	44-146			
Surr: 2-Fluorophenol	3.85		"	5.00		77.0	42-126			
Surr: Nitrobenzene-d5	1.90		"	2.50		76.0	42-126			
Surr: Phenol-d6	3.73		"	5.00		74.6	42-131			

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CRAW00004195



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Ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Semi-quantitative Organic Compounds as EPA Method 8210 - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1050283 - EPA 3550

##### Blank (1050283-BLK1)

Prepared: 05/07/01 Analyzed: 05/09/01

Surr: p-Terphenyl-d14	2.31		mg/kg wet	2.50		92.4	49-150			
Surr: 2,4,6-Tribromophenol	4.48		"	5.00		89.6	48-119			

##### LCS (1050283-BS1)

Prepared: 05/07/01 Analyzed: 05/09/01

Acenaphthene	2.80	0.330	mg/kg wet	2.50		112	47-145			
4-Chloro-3-methylphenol	4.76	0.330	"	5.00		95.2	22-147			
4-Chlorophenol	4.06	0.330	"	5.00		81.2	23-134			
1,4-Dichlorobenzene	1.95	1.00	"	2.50		78.0	20-124			
1-Dinitrotoluene	2.89	0.500	"	2.50		116	39-139			
Nitrophenol	5.70	1.00	"	5.00		114	0-132			
N-Nitrosodi-n-propylamine	2.62	0.330	"	2.50		105	0-230			
Pentachlorophenol	5.13	1.00	"	5.00		103	14-176			
Phenol	4.11	0.330	"	5.00		82.2	5-112			
Pyrene	2.38	0.330	"	2.50		95.2	52-130			
Surr: 2,4-Trichlorobenzene	2.36	0.330	"	2.50		94.4	44-142			
Surr: 2-Fluorobiphenyl	1.78		"	2.50		71.2	44-146			
Surr: 2-Fluorophenol	4.20		"	5.00		84.0	42-126			
Surr: Nitrobenzene-d5	1.56		"	2.50		62.4	42-126			
Surr: Phenol-d6	3.97		"	5.00		79.4	42-131			
Surr: p-Terphenyl-d14	1.96		"	2.50		78.4	49-150			
Surr: 2,4,6-Tribromophenol	5.11		"	5.00		102	48-119			

##### Matrix Spike (1050283-MS1)

Source: P1D0788-01

Prepared: 05/07/01 Analyzed: 05/09/01

Acenaphthene	2.17	0.330	mg/kg dry	3.06	ND	70.9	47-145			
4-Chloro-3-methylphenol	5.52	0.330	"	6.12	ND	90.2	22-147			
4-Chlorophenol	4.23	0.330	"	6.12	ND	69.1	23-134			
1,4-Dichlorobenzene	ND	1.00	"	3.06	ND	22.1	20-124			
2,4-Dinitrotoluene	2.06	0.500	"	3.06	ND	67.3	39-139			
Nitrophenol	6.42	1.00	"	6.12	ND	105	0-132			
N-Nitrosodi-n-propylamine	1.77	0.330	"	3.06	ND	57.8	0-230			
Pentachlorophenol	4.68	1.00	"	6.12	ND	76.5	14-176			
Phenol	4.53	0.330	"	6.12	ND	74.0	5-112			
Pyrene	2.20	0.330	"	3.06	0.334	61.0	52-130			
1,2,4-Trichlorobenzene	1.25	0.330	"	3.06	ND	40.8	44-142			Q-01
Surr: 2-Fluorobiphenyl	2.27		"	3.06		74.2	44-146			
Surr: 2-Fluorophenol	4.10		"	6.12		67.0	42-126			

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

  
Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004196



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Semivolatile Organic Compounds per EPA Method 8270C - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1050283 - EPA 3550										
Matrix Spike (1050283-MS1)		Source: P1D0788-01		Prepared: 05/07/01		Analyzed: 05/09/01				
Surr: Nitrobenzene-d5	1.91		mg/kg dry	3.06		62.4	42-126			
Surr: Phenol-d6	4.18		"	6.12		68.3	42-131			
Surr: p-Terphenyl-d14	2.70		"	3.06		88.2	49-150			
Surr: 2,4,6-Tribromophenol	6.15		"	6.12		100	48-119			
Matrix Spike Dup (1050283-MSD1)		Source: P1D0788-01		Prepared: 05/07/01		Analyzed: 05/09/01				
Acenaphthene	2.56	0.330	mg/kg dry	3.06	ND	83.7	47-145	16.5	60	
4-Chloro-3-methylphenol	5.61	0.330	"	6.12	ND	91.7	22-147	1.62	60	
4-Chlorophenol	4.88	0.330	"	6.12	ND	79.7	23-134	14.3	60	
1,4-Dichlorobenzene	1.46	1.00	"	3.06	ND	47.7	20-124	73.3	60	Q-01
2,4-Dinitrotoluene	2.15	0.500	"	3.06	ND	70.3	39-139	4.28	60	
4-Nitrophenol	6.68	1.00	"	6.12	ND	109	0-132	3.97	60	
4-Nitrosodi-n-propylamine	2.32	0.330	"	3.06	ND	75.8	0-230	26.9	60	
Pentachlorophenol	3.53	1.00	"	6.12	ND	57.7	14-176	28.0	60	
Phenol	4.89	0.330	"	6.12	ND	79.9	5-112	7.64	60	
Pyrene	2.47	0.330	"	3.06	0.334	69.8	52-130	11.6	60	
1,2,4-Trichlorobenzene	2.01	0.330	"	3.06	ND	65.7	44-142	46.6	60	
Surr: 2-Fluorobiphenyl	2.65		"	3.06		86.6	44-146			
Surr: 2-Fluorophenol	4.92		"	6.12		80.4	42-126			
Surr: Nitrobenzene-d5	2.37		"	3.06		77.5	42-126			
Surr: Phenol-d6	4.68		"	6.12		76.5	42-131			
Surr: p-Terphenyl-d14	2.84		"	3.06		92.8	49-150			
Surr: 2,4,6-Tribromophenol	6.26		"	6.12		102	48-119			

North Creek Analytical - Portland

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*PR*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004197



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541.383.9310 fax 541.382.7588

Ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Polymethylar Aromatics, Compounds, per EPA 3520/600 Series, Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit	Notes
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#### atch 1041026 - EPA 3520/600 Series

##### Blank (1041026-BLK1)

Prepared: 04/30/01 Analyzed: 05/14/01

2-Methylnaphthalene	ND	0.100	ug/l
enaphthene	ND	0.100	"
enaphthylene	ND	0.100	"
Anthracene	ND	0.100	"
nzo (a) anthracene	ND	0.100	"
nzo (a) pyrene	ND	0.100	"
Benzo (b) fluoranthene	ND	0.100	"
Benzo (ghi) perylene	ND	0.100	"
nzo (k) fluoranthene	ND	0.100	"
Chrysene	ND	0.100	"
Dibenzo (a,h) anthracene	ND	0.200	"
loranthene	ND	0.100	"
orene	ND	0.100	"
Indeno (1,2,3-cd) pyrene	ND	0.100	"
ipthalene	ND	0.100	"
ienanthrene	ND	0.100	"
Pyrene	ND	0.100	"

Surr: Fluorene-d10	2.04	"	2.50	81.6	25-105
Surr: Pyrene-d10	2.92	"	2.50	117	30-130
Surr: Benzo (a) pyrene-d12	2.61	"	2.50	104	22-120

##### CS (1041026-BS1)

Prepared: 04/30/01 Analyzed: 05/07/01

acenaphthene	2.07	0.100	ug/l	2.50	82.8	26-135
Benzo (a) pyrene	2.76	0.100	"	2.50	110	38-137
Pyrene	2.32	0.100	"	2.50	92.8	33-133
Surr: Fluorene-d10	1.93	"	2.50	77.2	25-105	
Surr: Pyrene-d10	2.92	"	2.50	117	30-130	
Surr: Benzo (a) pyrene-d12	2.70	"	2.50	108	22-120	

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*PN*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004198



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Polyaromatic Aromatic Compounds (PAHs) - EPA 3520/600 Series Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

#### Batch 1041026 - EPA 3520/600 Series

ACS Dup (1041026-BSD1)

Prepared: 04/30/01 Analyzed: 05/07/01

Acenaphthene	2.12	0.100	ug/l	2.50	84.8	26-135	2.39	60	
benzo (a) pyrene	2.67	0.100	"	2.50	107	38-137	3.31	60	
fluorene	2.32	0.100	"	2.50	92.8	33-133	0.00	60	
Surr: Fluorene-d10	2.04		"	2.50	81.6	25-105			
Surr: Pyrene-d10	2.93		"	2.50	117	30-130			
Surr: Benzo (a) pyrene-d12	2.68		"	2.50	107	22-120			

North Creek Analytical - Portland

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AN

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
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CRAW00004199



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

Percent Dry Weight (Solids) per Standard Methods - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	--------------	-------

#### Batch 1040967 - Dry Weight

Duplicate (1040967-DUP1)		Source: PID0596-03		Prepared: 04/27/01 Analyzed: 04/30/01	
% Solids	84.0	1.00 % by Weight	83.8	0.238	20
Duplicate (1040967-DUP2)		Source: PID0669-01		Prepared: 04/27/01 Analyzed: 04/30/01	
% Solids	18.8	1.00 % by Weight	19.0	1.06	20
Duplicate (1040967-DUP3)		Source: PID0714-23		Prepared: 04/27/01 Analyzed: 04/30/01	
% Solids	81.6	1.00 % by Weight	88.0	7.55	20

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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Environmental Laboratory Network

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CRAW00004200



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Ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:38

#### Notes and Definitions

- 13 Sample extract was cleaned-up to remove suspect biogenic interference.
- Q-01 The spike recovery, and/or RPD, for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
- 02 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- Q-06 Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
- 08 Surrogate recovery is above control limits. Since no analytes were detected in the sample, the quality of the data has not been affected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
- wet Sample results reported on a wet weight basis (as received)
- RPD Relative Percent Difference

North Creek Analytical - Portland

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*RN*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

53 of 53

CRAW00004201



E 15 M. , , Spo A 99' :6 ,924- FA. :290  
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# CHAIN OF CUSTODY REPORT

Work Order #: **P100852**

CLIENT: <b>Bridgewater Group</b> REPORT TO: <b>Ross Riecke</b> ADDRESS: <b>4500 Kruse Way Suite 110</b> <b>Lake Oswego OR 97035</b> PHONE: <b>503 675 5252</b> FAX:		INVOICE TO: <b>Same</b> P.O. NUMBER:		<b>TURNAROUND REQUEST in Business Days*</b> Organic & Inorganic Analyses <input checked="" type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. Petroleum Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. OTHER <span style="border: 1px solid black; padding: 2px;">Please Specify</span> <small>*Turnaround Requests less than standard may incur Rush Charges.</small>											
PROJECT NAME: <b>Corn Sand St</b> PROJECT NUMBER: SAMPLED BY: <b>DR. Dyer</b>		<b>REQUESTED ANALYSES</b>										MATRIX (W, S, O) # OF CONT. COMMENTS NC- WO ID			
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	VOC 8261	PAH	VOC 8261	TPH-G	TPH-D	PP methyl	PP methyl	PP methyl	PP methyl	PP methyl				
1. PP-1W	4/25/01 1545	X		X	X								W	5	
2. PP-2W	" 1420	X		X	X								W	5	
3. PP-3W	" 10140		X	X	X	X	X						W	7	
4. PP-4-8	" TN20														
5. PP-1-24	" 1225	X		X	X								S	2	
6. Trip Blank	"			X									W	1	
7.															
8.															
9.															
10.															
11.															
12.															
13.															
14.															
15.															

RELINQUISHED BY: <b>DR. Dyer</b> PRINT NAME: <b>Dennis R Dyer</b>	FIRM: <b>BFSW</b>	DATE: <b>4/25/01</b> TIME: <b>1015</b>	RECEIVED BY: <b>Kimberly C. Davis</b> PRINT NAME: <b>Kim Davis</b>	FIRM: <b>NCA</b>	DATE: <b>4/25/01</b> TIME: <b>1815</b>
RELINQUISHED BY: PRINT NAME:	FIRM:	DATE: TIME:	RECEIVED BY: PRINT NAME:	FIRM:	DATE: TIME:
ADDITIONAL REMARKS:					

COC REV 3/99

TEMP: **15.7**

PAGE **1** OF **1**

CRAW00004202



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541.383.9310 fax 541.382.7588

May, 2001

Miss Rieke  
Bridgewater Group  
1500 Kruse Way Suite 110  
Lake Oswego, OR 97035

RE: Crawford St.

Enclosed are the results of analyses for samples received by the laboratory on 04/26/01 13:25. If  
you have any questions concerning this report, please feel free to contact me.

Sincerely,

  
Philip Nerenberg  
Laboratory Manager

Work Orders included in this report:  
P1D0891

*North Creek Analytical, Inc.*  
**Environmental Laboratory Network**

CRAW00004203



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-1	P1D0891-01	Soil	04/26/01 09:30	04/26/01 13:25
SS-2	P1D0891-02	Soil	04/26/01 12:10	04/26/01 13:25
S-3	P1D0891-03	Soil	04/26/01 11:46	04/26/01 13:25
SS-4	P1D0891-04	Soil	04/26/01 11:25	04/26/01 13:25
S-10	P1D0891-05	Soil	04/26/01 10:30	04/26/01 13:25

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

1 of 20

CRAW00004204



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Bridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieck


Reported:  
05/21/01 15:16

**Gasoline Hydrocarbons per NW TPH-Gx Method**  
**North Creek Analytical - Portland**

Sample	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>-1 (P1D0891-01) Soil</b> <span style="float: right;">Sampled: 04/26/01 Received: 04/26/01</span>									
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/27/01	04/27/01	1040986	
Surr: 4-BFB	85.9 %	50-150							
<b>-2 (P1D0891-02) Soil</b> <span style="float: right;">Sampled: 04/26/01 Received: 04/26/01</span>									
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/27/01	04/28/01	1040986	
Surr: 4-BFB	82.6 %	50-150							
<b>SS-3 (P1D0891-03) Soil</b> <span style="float: right;">Sampled: 04/26/01 Received: 04/26/01</span>									
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/27/01	04/28/01	1040986	
Surr: 4-BFB	79.5 %	50-150							
<b>SS-4 (P1D0891-04) Soil</b> <span style="float: right;">Sampled: 04/26/01 Received: 04/26/01</span>									
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/27/01	04/28/01	1040986	
Surr: 4-BFB	83.3 %	50-150							
<b>i-10 (P1D0891-05) Soil</b> <span style="float: right;">Sampled: 04/26/01 Received: 04/26/01</span>									
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/27/01	04/28/01	1040986	
Surr: 4-BFB	84.5 %	50-150							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

2 of 20

CRAW00004205



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Ridgewater Group  
1000 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke


Reported:  
05/21/01 15:16

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SS-1 (PID0891-01) Soil <span style="float:right">Sampled: 04/26/01 Received: 04/26/01</span>									
Diesel Range Organics	ND	250	mg/kg dry	10	NWTPH-Dx	04/27/01	04/27/01	1040992	R-02
Heavy Oil Range Hydrocarbons	3130	500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	99.4 %	50-150							
SS-2 (PID0891-02) Soil <span style="float:right">Sampled: 04/26/01 Received: 04/26/01</span>									
Diesel Range Organics	ND	1000	mg/kg dry	40	NWTPH-Dx	04/27/01	04/30/01	1040992	R-02
Heavy Oil Range Hydrocarbons	13500	2000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	NR	50-150							S-01
SS-3 (PID0891-03) Soil <span style="float:right">Sampled: 04/26/01 Received: 04/26/01</span>									
Diesel Range Organics	ND	250	mg/kg dry	10	NWTPH-Dx	04/27/01	04/27/01	1040992	R-02
Heavy Oil Range Hydrocarbons	5350	500	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	68.2 %	50-150							
SS-4 (PID0891-04) Soil <span style="float:right">Sampled: 04/26/01 Received: 04/26/01</span>									
Diesel Range Organics	ND	500	mg/kg dry	20	NWTPH-Dx	04/27/01	04/27/01	1040992	R-02
Heavy Oil Range Hydrocarbons	6350	1000	"	"	"	"	"	"	R-02
Surr: 1-Chlorooctadecane	NR	50-150							S-01
SS-10 (PID0891-05RE1) Soil <span style="float:right">Sampled: 04/26/01 Received: 04/26/01</span>									
Diesel Range Organics	78.3	25.0	mg/kg dry	1	NWTPH-Dx	04/27/01	05/10/01	1040992	A-01,D-13
Heavy Oil Range Hydrocarbons	180	50.0	"	"	"	"	"	"	D-13
Surr: 1-Chlorooctadecane	120 %	50-150							

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CRAW00004206



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

**Total Metals per EPA 6000/7000 Series Methods**  
**North Creek Analytical - Portland**

alyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>CS-1 (P1D0891-01) Soil</b>						Sampled: 04/26/01 Received: 04/26/01			
Antimony	3.32	0.500	mg/kg dry	1	EPA 6020	05/07/01	05/09/01	1050331	
Arsenic	15.5	0.500	"	"	"	"	"	"	
Beryllium	ND	0.500	"	10	"	"	"	"	
Cadmium	3.05	0.500	"	"	"	"	"	"	
Chromium	390	0.500	"	"	"	"	"	"	
Copper	612	1.00	"	"	"	"	"	"	
Lead	124	0.500	"	"	"	"	"	"	
Mercury	ND	0.100	"	1	EPA 7471A	05/08/01	05/09/01	1050345	
Nickel	1240	1.00	"	10	EPA 6020	05/07/01	05/09/01	1050331	
Selenium	ND	0.500	"	1	"	"	"	"	
Silver	ND	1.00	"	"	"	"	05/13/01	"	M-02
Thallium	ND	0.500	"	"	"	"	05/09/01	"	
Zinc	265	1.00	"	"	"	"	05/13/01	"	M-02
<b>-2 (P1D0891-02) Soil</b>						Sampled: 04/26/01 Received: 04/26/01			
Antimony	1.18	0.500	mg/kg dry	1	EPA 6020	05/07/01	05/09/01	1050331	
Arsenic	10.9	0.500	"	"	"	"	"	"	
Beryllium	0.815	0.500	"	10	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	812	0.500	"	"	"	"	"	"	
Copper	136	1.00	"	"	"	"	"	"	
Lead	106	0.500	"	"	"	"	"	"	
Mercury	ND	0.100	"	1	EPA 7471A	05/08/01	05/09/01	1050345	
Nickel	81.0	1.00	"	10	EPA 6020	05/07/01	05/09/01	1050331	
Selenium	0.846	0.500	"	1	"	"	"	"	
Silver	ND	1.00	"	"	"	"	05/13/01	"	M-02
Thallium	ND	0.500	"	"	"	"	05/09/01	"	
Zinc	246	1.00	"	"	"	"	05/13/01	"	M-02

North Creek Analytical - Portland

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CRAW00004207



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Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

**Total Metals per EPA 6000/7000 Series Methods**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SS-3 (P1D0891-03) Soil									
Sampled: 04/26/01						Received: 04/26/01			
Antimony	1.30	0.500	mg/kg dry	1	EPA 6020	05/07/01	05/09/01	1050331	
Arsenic	18.4	0.500	"	"	"	"	"	"	
Beryllium	ND	0.500	"	10	"	"	"	"	
Cadmium	2.43	0.500	"	"	"	"	"	"	
Chromium	125	0.500	"	"	"	"	"	"	
Copper	247	1.00	"	"	"	"	"	"	
Lead	123	0.500	"	"	"	"	"	"	
Mercury	ND	0.100	"	1	EPA 7471A	05/08/01	05/09/01	1050345	
Nickel	409	1.00	"	10	EPA 6020	05/07/01	05/09/01	1050331	
Selenium	0.588	0.500	"	1	"	"	"	"	
Silver	ND	1.00	"	"	"	"	05/13/01	"	M-02
Thallium	ND	0.500	"	"	"	"	05/09/01	"	
Zinc	526	1.00	"	"	"	"	05/13/01	"	M-02
SS-4 (P1D0891-04) Soil									
Sampled: 04/26/01						Received: 04/26/01			
Antimony	0.918	0.500	mg/kg dry	1	EPA 6020	05/07/01	05/09/01	1050331	
Arsenic	9.69	0.500	"	"	"	"	"	"	
Beryllium	ND	0.500	"	10	"	"	"	"	
Cadmium	0.814	0.500	"	"	"	"	"	"	
Chromium	48.7	0.500	"	"	"	"	"	"	
Copper	172	1.00	"	"	"	"	"	"	
Lead	184	0.500	"	"	"	"	"	"	
Mercury	0.136	0.100	"	1	EPA 7471A	05/08/01	05/09/01	1050345	
Nickel	62.0	1.00	"	10	EPA 6020	05/07/01	05/09/01	1050331	
Selenium	0.502	0.500	"	1	"	"	"	"	
Silver	ND	1.00	"	"	"	"	05/13/01	"	M-02
Thallium	ND	0.500	"	"	"	"	05/09/01	"	
Zinc	375	1.00	"	"	"	"	05/13/01	"	M-02

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Bridgewater Group  
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Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

**Total Metals per EPA 6000/7000 Series Methods**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SS-10 (P1D0891-05) Soil						Sampled: 04/26/01 Received: 04/26/01			
Cadmium	ND	0.500	mg/kg dry	10	EPA 6010A	05/04/01	05/09/01	1050213	M-01
Chromium	174	0.500	"	"	"	"	"	"	M-01, Q-25
Lead	140	0.500	"	"	"	"	05/06/01	"	M-01
Mercury	ND	0.100	"	1	EPA 7471A	05/08/01	05/09/01	1050345	

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Bridgewater Group  
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Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>SS-1 (P1D0891-01) Soil</b>						Sampled: 04/26/01 Received: 04/26/01		<b>R-05</b>	
benaphthene	ND	67.0	ug/kg dry	5	EPA 8270m	05/07/01	05/08/01	1050259	
Acenaphthylene	ND	67.0	"	"	"	"	"	"	
Anthracene	ND	67.0	"	"	"	"	"	"	
benzo (a) anthracene	ND	67.0	"	"	"	"	"	"	
benzo (a) pyrene	ND	67.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	123	67.0	"	"	"	"	"	"	
benzo (ghi) perylene	95.3	67.0	"	"	"	"	"	"	
benzo (k) fluoranthene	67.8	67.0	"	"	"	"	"	"	
Chrysene	110	67.0	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	67.0	"	"	"	"	"	"	
fluoranthene	85.9	67.0	"	"	"	"	"	"	
fluorene	ND	67.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	67.0	"	"	"	"	"	"	
naphthalene	ND	67.0	"	"	"	"	"	"	
phenanthrene	ND	67.0	"	"	"	"	"	"	
Pyrene	91.6	67.0	"	"	"	"	"	"	
Fluorene-d10	86.4 %	40-150							
Pyrene-d10	87.6 %	40-150							
Benzo (a) pyrene-d12	113 %	40-150							

<b>SS-2 (P1D0891-02) Soil</b>						Sampled: 04/26/01 Received: 04/26/01		<b>R-05</b>	
benaphthene	ND	134	ug/kg dry	10	EPA 8270m	05/07/01	05/08/01	1050259	
Acenaphthylene	ND	134	"	"	"	"	"	"	
anthracene	ND	134	"	"	"	"	"	"	
benzo (a) anthracene	ND	2680	"	200	"	"	05/10/01	"	
Benzo (a) pyrene	ND	670	"	50	"	"	05/09/01	"	
Benzo (b) fluoranthene	ND	670	"	"	"	"	"	"	
benzo (ghi) perylene	ND	670	"	"	"	"	"	"	
benzo (k) fluoranthene	ND	670	"	"	"	"	"	"	
Chrysene	ND	2680	"	200	"	"	05/10/01	"	
dibenzo (a,h) anthracene	ND	670	"	50	"	"	05/09/01	"	
fluoranthene	ND	1340	"	"	"	"	"	"	
Fluorene	ND	134	"	10	"	"	05/08/01	"	
Indeno (1,2,3-cd) pyrene	ND	670	"	50	"	"	05/09/01	"	
naphthalene	ND	134	"	10	"	"	05/08/01	"	
phenanthrene	ND	134	"	"	"	"	"	"	
Pyrene	ND	2680	"	200	"	"	05/10/01	"	
Fluorene-d10	89.8 %	40-150							

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CRAW00004210



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
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**-2 (P1D0891-02) Soil** Sampled: 04/26/01 Received: 04/26/01 **R-05**

Pyrene-d10	NR	40-150							S-01
Surr: Benzo (a) pyrene-d12	NR	40-150							S-01

**-3 (P1D0891-03) Soil** Sampled: 04/26/01 Received: 04/26/01 **R-05**

Acenaphthene	ND	67.0	ug/kg dry	5	EPA 8270m	05/07/01	05/08/01	1050259	
Acenaphthylene	ND	67.0	"	"	"	"	"	"	
thracene	ND	67.0	"	"	"	"	"	"	
nzo (a) anthracene	ND	67.0	"	"	"	"	"	"	
Benzo (a) pyrene	ND	67.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	67.0	"	"	"	"	"	"	
nzo (ghi) perylene	ND	67.0	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	67.0	"	"	"	"	"	"	
Chrysene	ND	67.0	"	"	"	"	"	"	
Benzo (a,h) anthracene	ND	67.0	"	"	"	"	"	"	
fluoranthene	ND	67.0	"	"	"	"	"	"	
Fluorene	ND	67.0	"	"	"	"	"	"	
Benzo (1,2,3-cd) pyrene	ND	67.0	"	"	"	"	"	"	
phthalene	ND	67.0	"	"	"	"	"	"	
Benzo (a) anthracene	ND	67.0	"	"	"	"	"	"	
Pyrene	ND	67.0	"	"	"	"	"	"	
Surr: Fluorene-d10	72.3 %	40-150							
Surr: Pyrene-d10	71.2 %	40-150							
Surr: Benzo (a) pyrene-d12	94.1 %	40-150							

**-4 (P1D0891-04) Soil** Sampled: 04/26/01 Received: 04/26/01 **R-05**

Acenaphthene	ND	168	ug/kg dry	5	EPA 8270m	05/07/01	05/08/01	1050259	
Acenaphthylene	ND	168	"	"	"	"	"	"	
thracene	ND	168	"	"	"	"	"	"	
Benzo (a) anthracene	259	168	"	"	"	"	"	"	
Benzo (a) pyrene	401	168	"	"	"	"	"	"	
Benzo (b) fluoranthene	566	168	"	"	"	"	"	"	
Benzo (ghi) perylene	486	168	"	"	"	"	"	"	
Benzo (k) fluoranthene	340	168	"	"	"	"	"	"	
Chrysene	438	168	"	"	"	"	"	"	
Benzo (a,h) anthracene	ND	168	"	"	"	"	"	"	
fluoranthene	384	168	"	"	"	"	"	"	
Fluorene	ND	168	"	"	"	"	"	"	
Benzo (1,2,3-cd) pyrene	379	168	"	"	"	"	"	"	

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CRAW00004211



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

### Polynuclear Aromatic Compounds per EPA 8270M-SIM

#### North Creek Analytical - Portland

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SS-4 (P1D0891-04) Soil					Sampled: 04/26/01 Received: 04/26/01			R-05	
phthalene	ND	168	ug/kg dry	5	EPA 8270m	05/07/01	05/08/01	1050259	
Phenanthrene	224	168	"	"	"	"	"	"	
Pyrene	314	168	"	"	"	"	"	"	
<hr/>									
Surr: Fluorene-d10	82.0 %	40-150							
Surr: Pyrene-d10	83.9 %	40-150							
Surr: Benzo (a) pyrene-d12	102 %	40-150							

SS-10 (P1D0891-05) Soil					Sampled: 04/26/01 Received: 04/26/01			R-05	
Acenaphthene	96.3	67.0	ug/kg dry	5	EPA 8270m	05/07/01	05/08/01	1050259	
Acenaphthylene	ND	67.0	"	"	"	"	"	"	
Anthracene	192	67.0	"	"	"	"	"	"	
Benzo (a) anthracene	498	67.0	"	"	"	"	"	"	
Benzo (a) pyrene	768	67.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	728	67.0	"	"	"	"	"	"	
Benzo (ghi) perylene	573	67.0	"	"	"	"	"	"	
Benzo (k) fluoranthene	682	67.0	"	"	"	"	"	"	
Brysene	632	67.0	"	"	"	"	"	"	
Benzo (a,h) anthracene	168	67.0	"	"	"	"	"	"	
Fluoranthene	927	67.0	"	"	"	"	"	"	
Fluorene	99.8	67.0	"	"	"	"	"	"	
Benzo (1,2,3-cd) pyrene	515	67.0	"	"	"	"	"	"	
Phthalene	ND	67.0	"	"	"	"	"	"	
Phenanthrene	658	67.0	"	"	"	"	"	"	
Pyrene	742	67.0	"	"	"	"	"	"	
<hr/>									
Surr: Fluorene-d10	92.0 %	40-150							
Surr: Pyrene-d10	96.4 %	40-150							
Surr: Benzo (a) pyrene-d12	105 %	40-150							

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CRAW00004212



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Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

**Percent Dry Weight (Solids) per Standard Methods**  
**North Creek Analytical - Portland**

anlyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SS-1 (P1D0891-01) Soil						Sampled: 04/26/01 Received: 04/26/01			
% Solids	88.5	1.00 % by Weight		1	NCA SOP	04/30/01	05/01/01	1041056	
SS-2 (P1D0891-02) Soil						Sampled: 04/26/01 Received: 04/26/01			
% Solids	79.2	1.00 % by Weight		1	NCA SOP	04/30/01	05/01/01	1041056	
SS-3 (P1D0891-03) Soil						Sampled: 04/26/01 Received: 04/26/01			
% Solids	86.7	1.00 % by Weight		1	NCA SOP	04/30/01	05/01/01	1041056	
SS-4 (P1D0891-04) Soil						Sampled: 04/26/01 Received: 04/26/01			
% Solids	81.7	1.00 % by Weight		1	NCA SOP	04/30/01	05/01/01	1041056	
SS-10 (P1D0891-05) Soil						Sampled: 04/26/01 Received: 04/26/01			
% Solids	94.5	1.00 % by Weight		1	NCA SOP	04/30/01	05/01/01	1041056	

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CRAW00004213



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16


Gasoline Hydrocarbons per NW TPH-G Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
tch 1040986 - EPA 5035										
Blank (1040986-BLK1)				Prepared & Analyzed: 04/27/01						
Gasoline Range Hydrocarbons	ND	4.00	mg/kg wet							
T: 4-BFB	2.35		"	2.50		94.0	50-150			
LCS (1040986-BS1)				Prepared & Analyzed: 04/27/01						
Gasoline Range Hydrocarbons	72.6	4.00	mg/kg wet	62.5		116	50-150			
T: 4-BFB	2.74		"	2.50		110	50-150			
Duplicate (1040986-DUP1)				Source: P1D0860-01		Prepared & Analyzed: 04/27/01				
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry		ND			4.86	50	
T: 4-BFB	2.43		"	3.26		74.5	50-150			
Duplicate (1040986-DUP2)				Source: P1D0891-01		Prepared: 04/27/01 Analyzed: 04/28/01				
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry		ND			13.3	50	
Surr: 4-BFB	2.37		"	2.83		83.7	50-150			

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CRAW00004214



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

Diesel and Heavy Range Organics by EPA Method 8210 - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1040992 - EPA 3550 Fuels</b>										
<b>Blank (1040992-BLK1)</b>										
					Prepared & Analyzed: 04/27/01					
Diesel Range Organics	ND	25.0	mg/kg wet							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	4.17		"	4.80		86.9	50-150			
<b>CS (1040992-CS1)</b>										
					Prepared & Analyzed: 04/27/01					
Diesel Range Organics	110	25.0	mg/kg wet	129		85.3	50-150			
Heavy Oil Range Hydrocarbons	61.7	50.0	"	79.0		78.1	50-150			
Surr: 1-Chlorooctadecane	4.69		"	4.80		97.7	50-150			
<b>Duplicate (1040992-DUP1)</b>										
					Source: PID0888-04		Prepared & Analyzed: 04/27/01			
Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	6.79		"	5.90		115	50-150			
<b>Duplicate (1040992-DUP2)</b>										
					Source: PID0891-03		Prepared & Analyzed: 04/27/01			
Diesel Range Organics	ND	250	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	3070	500	"		5350			54.2	50	Q-14
Surr: 1-Chlorooctadecane	3.58		"	5.54		64.6	50-150			

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CRAW00004215



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ridgewater Group  
500 Kruse Way Suite 110  
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Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieck

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05/21/01 15:16

Total Metals per EPA 8000-A-000-9000 Semi-automated - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### tch 1050213 - EPA 3050

##### Blank (1050213-BLK1)

Prepared: 05/04/01 Analyzed: 05/09/01

Cadmium	ND	0.500	mg/kg wet							M-01
Chromium	1.18	0.500	"							B,M-01
Lead	ND	0.500	"							M-01

##### LCS (1050213-BS1)

Prepared: 05/04/01 Analyzed: 05/09/01

Iron	20.3	0.500	mg/kg wet	20.0		102	83.5-102			M-01
Chromium	49.0	0.500	"	50.0		98.0	87-105			M-01
Lead	106	0.500	"	100		106	82.3-106			M-01

##### uplicate (1050213-DUP1)

Source: P1D0931-01

Prepared: 05/04/01 Analyzed: 05/09/01

Cadmium	ND	0.500	mg/kg dry		ND			40		M-01
Chromium	27.3	0.500	"		24.8			9.60	40	M-01
Lead	17.1	0.500	"		15.3			11.1	40	M-01

##### Matrix Spike (1050213-MS1)

Source: P1D0931-01

Prepared: 05/04/01 Analyzed: 05/09/01

Cadmium	24.0	0.500	mg/kg dry	25.5	ND	94.1	75-125			M-01
Chromium	89.9	0.500	"	63.8	24.8	102	75-125			M-01
Lead	153	0.500	"	128	15.3	108	75-125			M-01

#### Batch 1050331 - EPA 3050

##### Blank (1050331-BLK1)

Prepared: 05/07/01 Analyzed: 05/09/01

Antimony	ND	0.500	mg/kg wet							
Arsenic	ND	0.500	"							
Beryllium	ND	0.500	"							
Cadmium	ND	0.500	"							
Chromium	ND	0.500	"							
Copper	ND	1.00	"							
Lead	ND	0.500	"							
Nickel	ND	1.00	"							
Selenium	ND	0.500	"							
Silver	ND	1.00	"							M-02
Thallium	ND	0.500	"							
Zinc	ND	1.00	"							M-02

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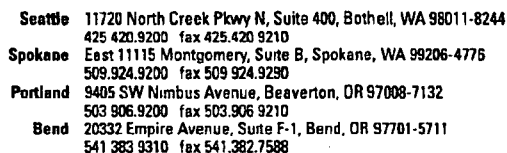
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CRAW00004216



**Reported:**  
05/21/01 15:16

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Matrix Spike (1050331-MS1)	Source: P1D0891-01			Prepared: 05/07/01		Analyzed: 05/09/01		
Antimony	8.40	0.500	mg/kg dry	5.65	3.32	89.9	75-125	
Arsenic	30.9	0.500	"	11.3	15.5	136	75-125	Q-02
Beryllium	10.4	0.500	"	11.3	ND	89.7	75-125	
Cadmium	13.8	0.500	"	11.3	3.05	95.1	75-125	
Chromium	474	0.500	"	11.3	390	NR	75-125	Q-03
Copper	742	1.00	"	11.3	612	NR	75-125	Q-03
Lead	127	0.500	"	11.3	124	26.5	75-125	Q-02
Nickel	1060	1.00	"	11.3	1240	NR	75-125	Q-03

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CRAW00004217



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Bridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

Environmental per EPA 8000 Series Methods Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1050331 - EPA 3050</b>									
<b>Matrix Spike (1050331-MS1)</b>		<b>Source: P1D0891-01</b>		<b>Prepared: 05/07/01</b>		<b>Analyzed: 05/09/01</b>			
Selenium	10.6	0.500	mg/kg dry	11.3	ND	89.7	75-125		
Copper	4.18	1.00	"	5.65	ND	74.0	75-125		M-02,Q-03
Barium	5.83	0.500	"	5.65	ND	103	75-125		
Zinc	264	1.00	"	11.3	265	NR	75-125		M-02,Q-03
<b>Matrix Spike (1050331-MS2)</b>		<b>Source: P1E0079-01</b>		<b>Prepared: 05/07/01</b>		<b>Analyzed: 05/09/01</b>			
Antimony	1.94	0.500	mg/kg dry	5.75	2.34	NR	75-125		Q-02
Arsenic	12.9	0.500	"	11.5	2.26	92.5	75-125		
Barium	11.3	0.500	"	11.5	ND	95.1	75-125		
Barium	11.5	0.500	"	11.5	ND	100	75-125		
Chromium	28.4	0.500	"	11.5	16.5	103	75-125		
Copper	26.9	1.00	"	11.5	16.9	87.0	75-125		
Lead	26.0	0.500	"	11.5	20.9	44.3	75-125		Q-02
Nickel	35.8	1.00	"	11.5	23.0	111	75-125		
Selenium	11.2	0.500	"	11.5	ND	94.2	75-125		
Silver	3.74	1.00	"	5.75	ND	65.0	75-125		M-02,Q-03
Barium	5.75	0.500	"	5.75	ND	97.3	75-125		
Zinc	64.9	1.00	"	11.5	61.5	29.6	75-125		M-02,Q-03

### Batch 1050345 - EPA 7471

<b>Blank (1050345-BLK1)</b>		<b>Prepared: 05/08/01</b>		<b>Analyzed: 05/09/01</b>	
Mercury	ND	0.100	mg/kg wet		
<b>BS (1050345-BS1)</b>		<b>Prepared: 05/08/01</b>		<b>Analyzed: 05/09/01</b>	
Mercury	0.947	0.100	mg/kg wet	1.00	94.7 80-120

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CRAW00004218



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Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
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Trace Metals per EPA Method 8210 Series Methods - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
tch 1050345 - EPA 7471									
Duplicate (1050345-DUP1)									
Mercury	ND	0.100	mg/kg dry	ND	ND	75-125	14.2	40	
Matrix Spike (1050345-MS1)									
Mercury	1.13	0.100	mg/kg dry	1.13	ND	75-125	95.5		
Matrix Spike (1050345-MS2)									
Mercury	1.15	0.100	mg/kg dry	1.11	ND	75-125	102		

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CRAW00004219



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Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

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North Creek Analytical - Portland

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1050259 - EPA 3550</b>										
<b>Blank (1050259-BLK1)</b>				Prepared: 05/07/01 Analyzed: 05/08/01						
Acenaphthene	ND	13.4	ug/kg wet							
Acenaphthylene	ND	13.4	"							
Anthracene	ND	13.4	"							
Benzo (a) anthracene	ND	13.4	"							
Benzo (a) pyrene	ND	13.4	"							
Benzo (b) fluoranthene	ND	13.4	"							
Benzo (ghi) perylene	ND	13.4	"							
Benzo (k) fluoranthene	ND	13.4	"							
Bisphenol A	ND	13.4	"							
Benzo (a,h) anthracene	ND	13.4	"							
Fluoranthene	ND	13.4	"							
Indene	ND	13.4	"							
Indeno (1,2,3-cd) pyrene	ND	13.4	"							
Naphthalene	ND	13.4	"							
Phenanthrene	ND	13.4	"							
Pyrene	ND	13.4	"							
Surr: Fluorene-d10	79.7		"	83.3		95.7	40-150			
Surr: Pyrene-d10	102		"	83.3		122	40-150			
Surr: Benzo (a) pyrene-d12	111		"	83.3		133	40-150			
<b>LCS (1050259-BS1)</b>				Prepared: 05/07/01 Analyzed: 05/08/01						
Acenaphthene	157	13.4	ug/kg wet	167		94.0	33-139			
Benzo (a) pyrene	196	13.4	"	167		117	45-149			
Pyrene	148	13.4	"	167		88.6	39-138			
Surr: Fluorene-d10	79.5		"	83.3		95.4	40-150			
Surr: Pyrene-d10	93.5		"	83.3		112	40-150			
Surr: Benzo (a) pyrene-d12	108		"	83.3		130	40-150			

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Bridgewater Group  
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Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/21/01 15:16

Percent Dry Weight (Solids) per Standard Methods 90 Quality Control

### North Creek Analytical - Portland

analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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#### atch 1041056 - Dry Weight

uplicate (1041056-DUP1)	Source: P1D0891-03	Prepared: 04/30/01	Analyzed: 05/01/01						
% Solids	85.2	1.00 % by Weight	86.7			1.75	20		

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CRAW00004221



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Tridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke


Reported:  
05/21/01 15:16

### Notes and Definitions

- A-01 Detected hydrocarbons are mainly due to overlap from the heavy/oil range; however, there is a trace of weathered diesel present.
- B Analyte detected in the method blank.
- D-13 Sample extract was cleaned-up to remove suspect biogenic interference.
- A-01 Analysis performed by EPA 200.8/6020 due to matrix interference or to meet lower reporting limit.
- M-02 Analysis performed by EPA 200.7/6010 due to high analyte concentration or sample matrix interference.
- Q-02 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- Q-03 The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
- Q-14 The Spike Recovery and/or RPD is outside of control limits due to a non-homogeneous sample matrix.
- Q-23 The Matrix Spike/Duplicate for this batch could not be reported. Source sample contains high levels of target analyte, non-target analyte, and/or matrix interference requiring high dilution.
- Q-25 The method blank contains analyte at a concentration above the MRL. This concentration is less than 5% of the sample result, which is negligible according to method criteria.
- R-02 The reporting limit for this analyte was raised due to the high analyte concentration present in the sample.
- R-05 Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
- wet Sample results reported on a wet weight basis (as received)
- RPD Relative Percent Difference

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CRAW00004222



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bridgewater Group  
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Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke


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CRAW00004223

# CHAIN OF CUSTODY REPORT

Work Order #: **100891**

CLIENT: <b>Bridgewater Group</b>		INVOICE TO: <b>Sum</b>		<b>TURNAROUND REQUEST in Business Days*</b> Organic & Inorganic Analyses <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. Petroleum Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. <input type="checkbox"/> OTHER Please Specify *Turnaround Requests less than standard may incur Rush Charges							
REPORT TO: <b>Ross Riche</b>		P.O. NUMBER:									
ADDRESS: <b>4500 SW Kruseway Suite 110 Lake Oswego OR 97035</b>											
PHONE: <b>503 6755252</b> FAX:		PROJECT NAME: <b>Crowford St</b>									
PROJECT NUMBER:		REQUESTED ANALYSES									
SAMPLED BY: <b>D.R. Dykes</b>											
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PAH	PPM <sub>metals</sub>	TEL P P P metals	TEL P P P metals	TEL P P P metals	TEL P P P metals	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NO. / O ID
1. <b>SS-1</b>	<b>4/26/01 930</b>	<b>X</b>	<b>X</b>	<b>*</b>	<b>X</b>		<b>X</b>	<b>S</b>	<b>2</b>		
2. <b>SS-2</b>	<b>12:10</b>	<b>X</b>	<b>X</b>	<b>*</b>	<b>X</b>		<b>X</b>	<b>S</b>	<b>2</b>		
3. <b>SS-3</b>	<b>11:46</b>	<b>X</b>	<b>X</b>	<b>*</b>	<b>X</b>		<b>X</b>	<b>S</b>	<b>2</b>		
4. <b>SS-4</b>	<b>11:45</b>	<b>X</b>	<b>X</b>	<b>*</b>	<b>X</b>		<b>X</b>	<b>S</b>	<b>2</b>		
5. <b>SS-10</b>	<b>10:30</b>	<b>X</b>			<b>X</b>	<b>X</b>	<b>*</b>	<b>S</b>	<b>2</b>		
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											
14.											
15.											
RELINQUISHED BY: <b>D.R. Dykes</b>		DATE: <b>4/26/01</b>		RECEIVED BY: <b>Sarah Passarge</b>		DATE: <b>4/26/01</b>					
PRINT NAME: <b>D.R. Dykes</b>		FIRM: <b>BPGW</b>		PRINT NAME: <b>Sarah Passarge</b>		FIRM: <b>NCA</b>					
RELINQUISHED BY:		DATE:		RECEIVED BY:		DATE:					
PRINT NAME:		FIRM:		PRINT NAME:		FIRM:					
ADDITIONAL REMARKS: <b>* analysis based on PPM<sub>metals</sub> result hold 2 instructions</b>		TEMP:		PAGE		OF					
COC REV 3/99											



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
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**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541 383 9310 fax 541 382 7588


1 May, 2001

Miss Rieke  
Bridgewater Group  
1500 Kruse Way Suite 110  
Lake Oswego, OR 97035

RE: Crawford St.

Enclosed are the results of analyses for samples received by the laboratory on 04/24/01 18:30. If  
you have any questions concerning this report, please feel free to contact me.

Sincerely,

  
Philip Nerenberg  
Laboratory Manager

Work Orders included in this report:  
P1D0788

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

CRAW00004225



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541.383.9310 fax 541.382.7588

Midgewater Group  
1000 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-6	P1D0788-01	Soil	04/24/01 10:30	04/24/01 18:30
SS-7	P1D0788-02	Soil	04/24/01 10:45	04/24/01 18:30
S-8	P1D0788-03	Soil	04/24/01 11:30	04/24/01 18:30
SS-9	P1D0788-04	Soil	04/24/01 11:40	04/24/01 18:30
SS-5	P1D0788-05	Soil	04/24/01 11:20	04/24/01 18:30
S-11	P1D0788-06	Soil	04/24/01 11:00	04/24/01 18:30
PP-2-20	P1D0788-07	Soil	04/24/01 15:45	04/24/01 18:30
P-3-24	P1D0788-08	Soil	04/24/01 13:25	04/24/01 18:30

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004226



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541 383 9310 fax 541 382 7588

bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Gasoline Hydrocarbons per NW TPH-Gx Method**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>-6 (P1D0788-01) Soil</b> <span style="float: right;">Sampled: 04/24/01 Received: 04/24/01</span>									
Gasoline Range Hydrocarbons	4.80	4.00	mg/kg dry	1	NW TPH-Gx	04/25/01	04/25/01	1040881	
Surr: 4-BFB	95.1 %	50-150							
<b>-7 (P1D0788-02) Soil</b> <span style="float: right;">Sampled: 04/24/01 Received: 04/24/01</span>									
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/25/01	04/25/01	1040881	
Surr: 4-BFB	87.6 %	50-150							
<b>SS-8 (P1D0788-03) Soil</b> <span style="float: right;">Sampled: 04/24/01 Received: 04/24/01</span>									
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/25/01	04/25/01	1040881	
Surr: 4-BFB	98.6 %	50-150							
<b>-9 (P1D0788-04) Soil</b> <span style="float: right;">Sampled: 04/24/01 Received: 04/24/01</span>									
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/25/01	04/25/01	1040881	
Surr: 4-BFB	96.1 %	50-150							
<b>-5 (P1D0788-05) Soil</b> <span style="float: right;">Sampled: 04/24/01 Received: 04/24/01</span>									
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/25/01	04/25/01	1040881	
Surr: 4-BFB	96.5 %	50-150							
<b>PP-2-20 (P1D0788-07) Soil</b> <span style="float: right;">Sampled: 04/24/01 Received: 04/24/01</span>									
Gasoline Range Hydrocarbons	4.84	4.00	mg/kg dry	1	NW TPH-Gx	04/25/01	04/26/01	1040881	
Surr: 4-BFB	95.5 %	50-150							
<b>P-3-24 (P1D0788-08) Soil</b> <span style="float: right;">Sampled: 04/24/01 Received: 04/24/01</span>									
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/25/01	04/26/01	1040881	
Surr: 4-BFB	92.3 %	50-150							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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Environmental Laboratory Network

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CRAW00004227



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
S-6 (P1D0788-01) Soil <span style="float:right">Sampled: 04/24/01 Received: 04/24/01</span>									
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	04/25/01	04/25/01	1040884	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	85.7 %	50-150							
SS-7 (P1D0788-02) Soil <span style="float:right">Sampled: 04/24/01 Received: 04/24/01</span>									
Diesel Range Organics	31.7	25.0	mg/kg dry	1	NWTPH-Dx	04/25/01	04/25/01	1040884	
Heavy Oil Range Hydrocarbons	70.4	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	88.7 %	50-150							
S-8 (P1D0788-03) Soil <span style="float:right">Sampled: 04/24/01 Received: 04/24/01</span>									
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	04/25/01	04/26/01	1040884	
Heavy Oil Range Hydrocarbons	194	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	107 %	50-150							
SS-9 (P1D0788-04) Soil <span style="float:right">Sampled: 04/24/01 Received: 04/24/01</span>									
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	04/25/01	04/25/01	1040884	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	93.1 %	50-150							
S-5 (P1D0788-05) Soil <span style="float:right">Sampled: 04/24/01 Received: 04/24/01</span>									
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	04/25/01	04/25/01	1040884	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	92.8 %	50-150							
P-2-20 (P1D0788-07) Soil <span style="float:right">Sampled: 04/24/01 Received: 04/24/01</span>									
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	04/25/01	04/25/01	1040884	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Surr: 1-Chlorooctadecane	92.7 %	50-150							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
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CRAW00004228



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P-3-24 (P1D0788-08) Soil						Sampled: 04/24/01 Received: 04/24/01			
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	04/25/01	04/25/01	1040884	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
arr: 1-Chlorooctadecane	87.4 %	50-150							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004229



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Total Metals per EPA 6000/7000 Series Methods**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
-6 (P1D0788-01) Soil									
Sampled: 04/24/01						Received: 04/24/01			
Antimony	ND	0.500	mg/kg dry	0.1	EPA 6020	05/03/01	05/05/01	1050192	
Arsenic	2.91	0.500	"	"	"	"	"	"	
Beryllium	0.563	0.500	"	1	EPA 6010A	"	"	"	M-01
Cadmium	ND	0.500	"	10	"	"	05/23/01	"	M-01
Chromium	25.7	0.500	"	1	"	"	05/05/01	"	M-01
Copper	24.8	0.500	"	"	"	"	"	"	M-01
Lead	40.6	0.500	"	"	"	"	"	"	M-01
Mercury	0.405	0.100	"	"	EPA 7471A	05/01/01	05/01/01	1050018	
Nickel	22.0	1.00	"	"	EPA 6010A	05/03/01	05/05/01	1050192	M-01
Selenium	ND	0.500	"	0.1	EPA 6020	"	"	"	
Silver	ND	0.500	"	1	EPA 6010A	"	"	"	M-01
Thallium	ND	0.500	"	0.1	EPA 6020	"	"	"	
Zinc	ND	22.7	"	9.07	EPA 6010A	"	"	"	M-01
-7 (P1D0788-02) Soil									
Sampled: 04/24/01						Received: 04/24/01			
Antimony	ND	0.500	mg/kg dry	0.1	EPA 6020	05/03/01	05/05/01	1050192	
Arsenic	5.17	0.500	"	"	"	"	"	"	
Beryllium	0.562	0.500	"	1	EPA 6010A	"	"	"	M-01
Cadmium	ND	0.500	"	10	"	"	05/23/01	"	M-01
Chromium	24.4	0.500	"	1	"	"	05/05/01	"	M-01
Copper	30.2	0.500	"	"	"	"	"	"	M-01
Lead	18.1	0.500	"	"	"	"	"	"	M-01
Mercury	0.130	0.100	"	"	EPA 7471A	05/01/01	05/01/01	1050018	
Nickel	27.7	1.00	"	"	EPA 6010A	05/03/01	05/05/01	1050192	M-01
Selenium	ND	0.500	"	0.1	EPA 6020	"	"	"	
Silver	ND	0.500	"	1	EPA 6010A	"	"	"	M-01
Thallium	ND	0.500	"	0.1	EPA 6020	"	"	"	
Zinc	101	23.0	"	9.18	EPA 6010A	"	"	"	M-01

North Creek Analytical - Portland

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CRAW00004230



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541.383.9310 fax 541.382.7568

ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Total Metals per EPA 6000/7000 Series Methods**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
S-8 (P1D0788-03) Soil									
						Sampled: 04/24/01 Received: 04/24/01			
Antimony	ND	0.500	mg/kg dry	0.1	EPA 6020	05/03/01	05/05/01	1050192	
Arsenic	5.65	0.500	"	"	"	"	"	"	
Beryllium	ND	0.500	"	1	EPA 6010A	"	"	"	M-01
Cadmium	ND	0.500	"	10	"	"	05/23/01	"	M-01
Chromium	69.0	0.500	"	1	"	"	05/05/01	"	M-01
Copper	170	0.500	"	"	"	"	"	"	M-01
Lead	45.6	0.500	"	"	"	"	"	"	M-01
Mercury	0.167	0.100	"	"	EPA 7471A	05/01/01	05/01/01	1050018	
Nickel	29.0	1.00	"	"	EPA 6010A	05/03/01	05/05/01	1050192	M-01
Selenium	0.503	0.500	"	0.1	EPA 6020	"	"	"	
Silver	ND	0.500	"	1	EPA 6010A	"	"	"	M-01
Thallium	ND	0.500	"	0.1	EPA 6020	"	"	"	
Zinc	178	2.50	"	1	EPA 6010A	"	05/08/01	"	
S-9 (P1D0788-04) Soil									
						Sampled: 04/24/01 Received: 04/24/01			
Antimony	ND	0.500	mg/kg dry	0.1	EPA 6020	05/03/01	05/05/01	1050192	
Arsenic	12.7	0.500	"	"	"	"	"	"	
Beryllium	0.693	0.500	"	1	EPA 6010A	"	"	"	M-01
Cadmium	ND	0.500	"	10	"	"	05/23/01	"	M-01
Chromium	32.3	0.500	"	1	"	"	05/05/01	"	M-01
Copper	30.2	0.500	"	"	"	"	"	"	M-01
Lead	36.6	0.500	"	"	"	"	"	"	M-01
Mercury	ND	0.100	"	"	EPA 7471A	05/01/01	05/01/01	1050018	
Nickel	25.3	1.00	"	"	EPA 6010A	05/03/01	05/05/01	1050192	M-01
Selenium	ND	0.500	"	0.1	EPA 6020	"	"	"	
Silver	ND	0.500	"	1	EPA 6010A	"	"	"	M-01
Thallium	ND	0.500	"	0.1	EPA 6020	"	"	"	
Zinc	122	2.50	"	1	EPA 6010A	"	05/08/01	"	

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004231



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541 383 9310 fax 541 382 7588

ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Total Metals per EPA 6000/7000 Series Methods**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>SS-5 (PID0788-05) Soil</b> <span style="float: right;">Sampled: 04/24/01 Received: 04/24/01</span>									
Lead	ND	0.500	mg/kg dry	10	EPA 6010A	05/04/01	05/09/01	1050213	M-01
Chromium	202	0.500	"	"	"	"	"	"	M-01, Q-25
Lead	65.3	0.500	"	"	"	"	05/06/01	"	M-01
Mercury	ND	0.100	"	1	EPA 7471A	05/01/01	05/01/01	1050018	
<b>SS-11 (PID0788-06) Soil</b> <span style="float: right;">Sampled: 04/24/01 Received: 04/24/01</span>									
Arsenic	12.6	0.500	mg/kg dry	0.1	EPA 6020	05/03/01	05/05/01	1050192	
Chromium	82.7	0.500	"	1	EPA 6010A	"	"	"	M-01
Copper	122	0.500	"	"	"	"	"	"	M-01
Lead	29.4	0.500	"	"	"	"	"	"	M-01
Nickel	54.6	1.00	"	"	"	"	"	"	M-01
Zinc	209	2.50	"	"	"	"	05/08/01	"	
<b>SS-24 (PID0788-08) Soil</b> <span style="float: right;">Sampled: 04/24/01 Received: 04/24/01</span>									
Antimony	ND	0.500	mg/kg dry	0.1	EPA 6020	05/03/01	05/05/01	1050192	
Arsenic	8.08	0.500	"	"	"	"	"	"	
Beryllium	0.647	0.500	"	1	EPA 6010A	"	"	"	M-01
Lead	ND	0.500	"	10	"	"	05/23/01	"	M-01
Chromium	20.7	0.500	"	1	"	"	05/05/01	"	M-01
Copper	24.4	0.500	"	"	"	"	"	"	M-01
Lead	14.7	0.500	"	"	"	"	"	"	M-01
Mercury	ND	0.100	"	"	EPA 7471A	05/01/01	05/01/01	1050018	
Nickel	20.3	1.00	"	"	EPA 6010A	05/03/01	05/05/01	1050192	M-01
Selenium	ND	0.500	"	0.1	EPA 6020	"	"	"	
Silver	ND	0.500	"	1	EPA 6010A	"	"	"	M-01
Thallium	ND	0.500	"	0.1	EPA 6020	"	"	"	
Zinc	87.5	23.0	"	9.19	EPA 6010A	"	"	"	M-01

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004232



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P1D0788-07 Soil						Sampled: 04/24/01 Received: 04/24/01			
Acetone	ND	1000	ug/kg dry	1	EPA 8260B	04/26/01	04/30/01	1040947	
Benzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Butanone	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
o-c-Butylbenzene	ND	100	"	"	"	"	"	"	
p-t-Butylbenzene	ND	100	"	"	"	"	"	"	
Carbon disulfide	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Chlorotoluene	ND	100	"	"	"	"	"	"	
p-Chlorotoluene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	500	"	"	"	"	"	"	
Dibromochloromethane	ND	100	"	"	"	"	"	"	
2-Dibromoethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	500	"	"	"	"	"	"	
1-Dichloroethane	ND	100	"	"	"	"	"	"	
2-Dichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
2-Dichloropropane	ND	100	"	"	"	"	"	"	
1-Dichloropropene	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Phenylbenzene	ND	100	"	"	"	"	"	"	

North Creek Analytical - Portland

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Environmental Laboratory Network

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CRAW00004233



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P-2-20 (P1D0788-07) Soil						Sampled: 04/24/01 Received: 04/24/01			
Bromochlorobutadiene	ND	200	ug/kg dry	1	EPA 8260B	04/26/01	04/30/01	1040947	
2-Hexanone	ND	1000	"	"	"	"	"	"	
Isopropylbenzene	ND	200	"	"	"	"	"	"	
Isopropyltoluene	ND	200	"	"	"	"	"	"	
Methyl-2-pentanone	ND	500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	100	"	"	"	"	"	"	
Ethylene chloride	ND	500	"	"	"	"	"	"	
o-Phthalene	ND	200	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
Trichloroethene	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane	ND	100	"	"	"	"	"	"	
2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
Xylene	ND	100	"	"	"	"	"	"	
m,p-Xylene	ND	200	"	"	"	"	"	"	
Surr: 4-BFB	103 %	70-130							
Surr: 1,2-DCA-d4	114 %	70-130							
Surr: Dibromofluoromethane	104 %	70-130							
Surr: Toluene-d8	118 %	70-130							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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Environmental Laboratory Network

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CRAW00004234



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Midgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

## Volatile Organic Compounds per EPA Method 8260B

### North Creek Analytical - Portland

Sample	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Sampled: 04/24/01 Received: 04/24/01									
Acetone	ND	1000	ug/kg dry	1	EPA 8260B	04/26/01	04/30/01	1040947	
Benzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
Butanone	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
t-Butylbenzene	ND	100	"	"	"	"	"	"	
Carbon disulfide	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
Chlorotoluene	ND	100	"	"	"	"	"	"	
Chlorotoluene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	500	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	500	"	"	"	"	"	"	
1-Dichloroethane	ND	100	"	"	"	"	"	"	
2-Dichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
2-Dichloropropane	ND	100	"	"	"	"	"	"	
1-Dichloropropene	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	

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Philip Nerenberg, Laboratory Manager

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CRAW00004235



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Volatile Organic Compounds per EPA Method 8260B**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>P-3-24 (PID0788-08) Soil</b>						Sampled: 04/24/01 Received: 04/24/01			
exachlorobutadiene	ND	200	ug/kg dry	1	EPA 8260B	04/26/01	04/30/01	1040947	
2-Hexanone	ND	1000	"	"	"	"	"	"	
propylbenzene	ND	200	"	"	"	"	"	"	
Isopropyltoluene	ND	200	"	"	"	"	"	"	
Methyl-2-pentanone	ND	500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	100	"	"	"	"	"	"	
ethylene chloride	ND	500	"	"	"	"	"	"	
naphthalene	ND	200	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
styrene	ND	100	"	"	"	"	"	"	
1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	ND	100	"	"	"	"	"	"	
toluene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1,1-trichloroethene	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
vinyl chloride	ND	100	"	"	"	"	"	"	
m,p-Xylene	ND	100	"	"	"	"	"	"	
m,p-Xylene	ND	200	"	"	"	"	"	"	
Surr: 4-BFB	103 %	70-130							
Surr: 1,2-DCA-d4	110 %	70-130							
Surr: Dibromofluoromethane	102 %	70-130							
Surr: Toluene-d8	115 %	70-130							

North Creek Analytical - Portland

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CRAW00004236



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Semivolatile Organic Compounds per EPA Method 8270C  
North Creek Analytical - Portland

Sample	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
Sampled: 04/24/01 Received: 04/24/01									
Sample 6 (P1D0788-01) Soil									
Acenaphthene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Acenaphthylene	ND	0.330	"	"	"	"	"	"	
Anthracene	ND	0.330	"	"	"	"	"	"	
nzo (a) anthracene	ND	0.330	"	"	"	"	"	"	
nzo (a) pyrene	ND	0.330	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.330	"	"	"	"	"	"	
nzo (ghi) perylene	ND	0.330	"	"	"	"	"	"	
nzo (k) fluoranthene	ND	0.330	"	"	"	"	"	"	
Benzoic Acid	ND	1.00	"	"	"	"	"	"	
Benzyl alcohol	ND	0.330	"	"	"	"	"	"	
Bromophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
n-butyl benzyl phthalate	ND	0.330	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.330	"	"	"	"	"	"	
Chloroaniline	ND	2.00	"	"	"	"	"	"	
bis(2-chloroethoxy)methane	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	0.330	"	"	"	"	"	"	
Chloronaphthalene	ND	0.330	"	"	"	"	"	"	
Chlorophenol	ND	0.330	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
Crysene	ND	0.330	"	"	"	"	"	"	
n-butyl phthalate	ND	1.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	0.330	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.330	"	"	"	"	"	"	
benzofuran	ND	0.330	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzidine	ND	1.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	0.330	"	"	"	"	"	"	
Diethyl phthalate	ND	0.330	"	"	"	"	"	"	
1-Dimethylphenol	ND	1.00	"	"	"	"	"	"	
1,2-Dimethyl phthalate	ND	0.330	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1.00	"	"	"	"	"	"	
1-Dinitrophenol	ND	2.00	"	"	"	"	"	"	
1-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	2.00	"	"	"	"	"	"	
10anthene	ND	0.330	"	"	"	"	"	"	

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CRAW00004237



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Semivolatile Organic Compounds per EPA Method 8270C**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P1D0788-01 Soil						Sampled: 04/24/01 Received: 04/24/01			
tolene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Hexachlorobenzene	ND	0.330	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
hexachlorocyclopentadiene	ND	1.00	"	"	"	"	"	"	
hexachloroethane	ND	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.330	"	"	"	"	"	"	
phorone	ND	0.330	"	"	"	"	"	"	
Methylnaphthalene	ND	0.330	"	"	"	"	"	"	
2-Methylphenol	ND	0.330	"	"	"	"	"	"	
2,4-Methylphenol	ND	0.330	"	"	"	"	"	"	
phthalene	ND	0.330	"	"	"	"	"	"	
1-Nitroaniline	ND	0.330	"	"	"	"	"	"	
3-Nitroaniline	ND	1.00	"	"	"	"	"	"	
4-Nitroaniline	ND	0.330	"	"	"	"	"	"	
trobenzene	ND	0.330	"	"	"	"	"	"	
2-Nitrophenol	ND	0.330	"	"	"	"	"	"	
4-Nitrophenol	ND	1.00	"	"	"	"	"	"	
Nitrosodi-n-propylamine	ND	0.330	"	"	"	"	"	"	
Nitrosodiphenylamine	ND	0.330	"	"	"	"	"	"	
Pentachlorophenol	ND	1.00	"	"	"	"	"	"	
enanthrene	ND	0.330	"	"	"	"	"	"	
cnol	ND	0.330	"	"	"	"	"	"	
Pyrene	0.334	0.330	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.330	"	"	"	"	"	"	
1,5-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
1,2,4,6-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	83.0 %	44-146							
Surr: 2-Fluorophenol	65.5 %	42-126							
Surr: Nitrobenzene-d5	68.6 %	42-126							
Surr: Phenol-d6	65.2 %	42-131							
Surr: p-Terphenyl-d14	87.9 %	49-150							
Surr: 2,4,6-Tribromophenol	84.6 %	48-119							

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004238



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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

BridgeWater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Semivolatile Organic Compounds per EPA Method 8270C  
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SC-7 (PID0788-02) Soil					Sampled: 04/24/01 Received: 04/24/01				
Benaphthene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Acenaphthylene	ND	0.330	"	"	"	"	"	"	
Anthracene	ND	0.330	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.330	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.330	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.330	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.330	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.330	"	"	"	"	"	"	
Benzoic Acid	ND	1.00	"	"	"	"	"	"	
Benzyl alcohol	ND	0.330	"	"	"	"	"	"	
Bromophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
Diethyl benzyl phthalate	ND	0.330	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.330	"	"	"	"	"	"	
Chloroaniline	ND	2.00	"	"	"	"	"	"	
Diethyl (2-chloroethoxy)methane	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	0.330	"	"	"	"	"	"	
Chloronaphthalene	ND	0.330	"	"	"	"	"	"	
Chlorophenol	ND	0.330	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
Chrysene	ND	0.330	"	"	"	"	"	"	
n-butyl phthalate	ND	1.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	0.330	"	"	"	"	"	"	
Di-benzo (a,h) anthracene	ND	0.330	"	"	"	"	"	"	
benzofuran	ND	0.330	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	1.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	0.330	"	"	"	"	"	"	
Diethyl phthalate	ND	0.330	"	"	"	"	"	"	
4-Dimethylphenol	ND	1.00	"	"	"	"	"	"	
Diethyl methyl phthalate	ND	0.330	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1.00	"	"	"	"	"	"	
4-Dinitrophenol	ND	2.00	"	"	"	"	"	"	
4-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	0.330	"	"	"	"	"	"	

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004239



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ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Semivolatile Organic Compounds per EPA Method 8270C**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
CS-7 (P1D0788-02) Soil						Sampled: 04/24/01 Received: 04/24/01			
1,2-dichlorobenzene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Hexachlorobenzene	ND	0.330	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
1,2,3,4-tetrachlorocyclopentadiene	ND	1.00	"	"	"	"	"	"	
1,2,3,4-tetrachloroethane	ND	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.330	"	"	"	"	"	"	
Phorone	ND	0.330	"	"	"	"	"	"	
Methylnaphthalene	ND	0.330	"	"	"	"	"	"	
2-Methylphenol	ND	0.330	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	0.330	"	"	"	"	"	"	
1,2,3,4-tetrahydronaphthalene	ND	0.330	"	"	"	"	"	"	
1-Nitroaniline	ND	0.330	"	"	"	"	"	"	
3-Nitroaniline	ND	1.00	"	"	"	"	"	"	
4-Nitroaniline	ND	0.330	"	"	"	"	"	"	
1,2,3,4-tetrahydronaphthalene	ND	0.330	"	"	"	"	"	"	
2-Nitrophenol	ND	0.330	"	"	"	"	"	"	
4-Nitrophenol	ND	1.00	"	"	"	"	"	"	
Nitrosodi-n-propylamine	ND	0.330	"	"	"	"	"	"	
Nitrosodiphenylamine	ND	0.330	"	"	"	"	"	"	
Pentachlorophenol	ND	1.00	"	"	"	"	"	"	
1,2,3,4-tetrahydronaphthalene	ND	0.330	"	"	"	"	"	"	
1,2,3,4-tetrahydronaphthalene	ND	0.330	"	"	"	"	"	"	
Pyrene	ND	0.330	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.330	"	"	"	"	"	"	
1,5-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
1,2,6-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	77.6 %	44-146							
Surr: 2-Fluorophenol	66.9 %	42-126							
Surr: Nitrobenzene-d5	63.4 %	42-126							
Surr: Phenol-d6	66.3 %	42-131							
Surr: p-Terphenyl-d14	91.5 %	49-150							
Surr: 2,4,6-Tribromophenol	94.9 %	48-119							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004240



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke


Reported:  
05/24/01 12:41

Semivolatile Organic Compounds per EPA Method 8270C  
North Creek Analytical - Portland

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
S-8 (P1D0788-03) Soil						Sampled: 04/24/01 Received: 04/24/01			
acenaphthene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Acenaphthylene	ND	0.330	"	"	"	"	"	"	
Anthracene	ND	0.330	"	"	"	"	"	"	
benzo (a) anthracene	ND	0.330	"	"	"	"	"	"	
benzo (a) pyrene	ND	0.330	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.330	"	"	"	"	"	"	
benzo (ghi) perylene	ND	0.330	"	"	"	"	"	"	
benzo (k) fluoranthene	ND	0.330	"	"	"	"	"	"	
Benzoic Acid	ND	1.00	"	"	"	"	"	"	
Benzyl alcohol	ND	0.330	"	"	"	"	"	"	
Bromophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
butyl benzyl phthalate	ND	0.330	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.330	"	"	"	"	"	"	
Chloroaniline	ND	2.00	"	"	"	"	"	"	
is(2-chloroethoxy)methane	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	0.330	"	"	"	"	"	"	
Chloronaphthalene	ND	0.330	"	"	"	"	"	"	
Chlorophenol	ND	0.330	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
chrysene	ND	0.330	"	"	"	"	"	"	
di-n-butyl phthalate	ND	1.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	0.330	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.330	"	"	"	"	"	"	
dibenzofuran	ND	0.330	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3'-Dichlorobenzidine	ND	1.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	0.330	"	"	"	"	"	"	
Diethyl phthalate	ND	0.330	"	"	"	"	"	"	
1,4-Dimethylphenol	ND	1.00	"	"	"	"	"	"	
Dimethyl phthalate	ND	0.330	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1.00	"	"	"	"	"	"	
1,4-Dinitrophenol	ND	2.00	"	"	"	"	"	"	
1,4-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	2.00	"	"	"	"	"	"	
luoranthene	ND	0.330	"	"	"	"	"	"	

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004241



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Widgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Semivolatile Organic Compounds per EPA Method 8270C  
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
CS-8 (P1D0788-03) Soil					Sampled: 04/24/01 Received: 04/24/01				
Borene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Hexachlorobenzene	ND	0.330	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1.00	"	"	"	"	"	"	
Hexachloroethane	ND	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.330	"	"	"	"	"	"	
Isophorone	ND	0.330	"	"	"	"	"	"	
Methylnaphthalene	ND	0.330	"	"	"	"	"	"	
2-Methylphenol	ND	0.330	"	"	"	"	"	"	
3,4-Methylphenol	ND	0.330	"	"	"	"	"	"	
1,2,3,4-Tetrahydronaphthalene	ND	0.330	"	"	"	"	"	"	
Nitroaniline	ND	0.330	"	"	"	"	"	"	
3-Nitroaniline	ND	1.00	"	"	"	"	"	"	
4-Nitroaniline	ND	0.330	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.330	"	"	"	"	"	"	
2-Nitrophenol	ND	0.330	"	"	"	"	"	"	
4-Nitrophenol	ND	1.00	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	0.330	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	0.330	"	"	"	"	"	"	
Pentachlorophenol	ND	1.00	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.330	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.330	"	"	"	"	"	"	
1,3,5-Trichlorobenzene	ND	0.330	"	"	"	"	"	"	
1,2,4-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
1,3,5-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	85.6 %	44-146							
Surr: 2-Fluorophenol	74.0 %	42-126							
Surr: Nitrobenzene-d5	73.3 %	42-126							
Surr: Phenol-d6	73.0 %	42-131							
Surr: p-Terphenyl-d14	79.8 %	49-150							
Surr: 2,4,6-Tribromophenol	93.2 %	48-119							

North Creek Analytical - Portland

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CRAW00004242



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541.383 9310 fax 541.382 7588

Ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Semivolatile Organic Compounds per EPA Method 8270C  
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P1D0788-04) Soil						Sampled: 04/24/01 Received: 04/24/01			
Acenaphthene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Acenaphthylene	ND	0.330	"	"	"	"	"	"	
Anthracene	ND	0.330	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.330	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.330	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.330	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.330	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.330	"	"	"	"	"	"	
Benzoic Acid	ND	1.00	"	"	"	"	"	"	
Benzyl alcohol	ND	0.330	"	"	"	"	"	"	
Bromophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	0.330	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.330	"	"	"	"	"	"	
Chloroaniline	ND	2.00	"	"	"	"	"	"	
1,2-bis(2-chloroethoxy)ethane	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	0.330	"	"	"	"	"	"	
Chloronaphthalene	ND	0.330	"	"	"	"	"	"	
Chlorophenol	ND	0.330	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
Chrysene	ND	0.330	"	"	"	"	"	"	
n-butyl phthalate	ND	1.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	0.330	"	"	"	"	"	"	
Fluoranthene	ND	0.330	"	"	"	"	"	"	
Benzo (a,h) anthracene	ND	0.330	"	"	"	"	"	"	
benzofuran	ND	0.330	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
3,3'-Dichlorobenzidine	ND	1.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	0.330	"	"	"	"	"	"	
Diethyl phthalate	ND	0.330	"	"	"	"	"	"	
4-Dimethylphenol	ND	1.00	"	"	"	"	"	"	
Dimethyl phthalate	ND	0.330	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1.00	"	"	"	"	"	"	
4-Dinitrophenol	ND	2.00	"	"	"	"	"	"	
4-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	2.00	"	"	"	"	"	"	
Fluoranthene	ND	0.330	"	"	"	"	"	"	

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004243



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541 383 9310 fax 541 382 7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Semivolatile Organic Compounds per EPA Method 8270C  
North Creek Analytical - Portland

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
S-9 (P1D0788-04) Soil						Sampled: 04/24/01 Received: 04/24/01			
luorene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Hexachlorobenzene	ND	0.330	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1.00	"	"	"	"	"	"	
Hexachloroethane	ND	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.330	"	"	"	"	"	"	
Isophorone	ND	0.330	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.330	"	"	"	"	"	"	
2-Methylphenol	ND	0.330	"	"	"	"	"	"	
2,4-Methylphenol	ND	0.330	"	"	"	"	"	"	
1,2,3,4-Tetrahydronaphthalene	ND	0.330	"	"	"	"	"	"	
1-Nitroaniline	ND	0.330	"	"	"	"	"	"	
3-Nitroaniline	ND	1.00	"	"	"	"	"	"	
4-Nitroaniline	ND	0.330	"	"	"	"	"	"	
1,2,4-Trinitrobenzene	ND	0.330	"	"	"	"	"	"	
2-Nitrophenol	ND	0.330	"	"	"	"	"	"	
4-Nitrophenol	ND	1.00	"	"	"	"	"	"	
1-Nitrosodi-n-propylamine	ND	0.330	"	"	"	"	"	"	
1-Nitrosodiphenylamine	ND	0.330	"	"	"	"	"	"	
Pentachlorophenol	ND	1.00	"	"	"	"	"	"	
Benzo(a)anthracene	ND	0.330	"	"	"	"	"	"	
Benzo(b)fluoranthene	ND	0.330	"	"	"	"	"	"	
Pyrene	ND	0.330	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.330	"	"	"	"	"	"	
1,2,4-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
1,2,4-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	79.9 %	44-146							
Surr: 2-Fluorophenol	73.1 %	42-126							
Surr: Nitrobenzene-d5	71.1 %	42-126							
Surr: Phenol-d6	70.9 %	42-131							
Surr: p-Terphenyl-d14	85.7 %	49-150							
Surr: 2,4,6-Tribromophenol	87.7 %	48-119							

North Creek Analytical - Portland

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Environmental Laboratory Network

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CRAW00004244



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541 383 9310 fax 541.382 7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Semivolatile Organic Compounds per EPA Method 8270C  
North Creek Analytical - Portland

anlyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P-2-20 (P1D0788-07) Soil						Sampled: 04/24/01 Received: 04/24/01			
cenaphthene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Acenaphthylene	ND	0.330	"	"	"	"	"	"	
Anthracene	ND	0.330	"	"	"	"	"	"	
enzo (a) anthracene	ND	0.330	"	"	"	"	"	"	
enzo (a) pyrene	ND	0.330	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.330	"	"	"	"	"	"	
enzo (ghi) perylene	ND	0.330	"	"	"	"	"	"	
enzo (k) fluoranthene	ND	0.330	"	"	"	"	"	"	
Benzoic Acid	ND	1.00	"	"	"	"	"	"	
Benzyl alcohol	ND	0.330	"	"	"	"	"	"	
-Bromophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
-butyl benzyl phthalate	ND	0.330	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.330	"	"	"	"	"	"	
-Chloroaniline	ND	2.00	"	"	"	"	"	"	
is(2-chloroethoxy)methane	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	0.330	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	0.330	"	"	"	"	"	"	
-Chloronaphthalene	ND	0.330	"	"	"	"	"	"	
-Chlorophenol	ND	0.330	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.330	"	"	"	"	"	"	
hrysene	ND	0.330	"	"	"	"	"	"	
ti-n-butyl phthalate	ND	1.00	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	0.330	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.330	"	"	"	"	"	"	
Dibenzofuran	ND	0.330	"	"	"	"	"	"	
,,2-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
,,4-Dichlorobenzene	ND	1.00	"	"	"	"	"	"	
,,3'-Dichlorobenzidine	ND	1.00	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	0.330	"	"	"	"	"	"	
Diethyl phthalate	ND	0.330	"	"	"	"	"	"	
,,4-Dimethylphenol	ND	1.00	"	"	"	"	"	"	
Dimethyl phthalate	ND	0.330	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1.00	"	"	"	"	"	"	
,,4-Dinitrophenol	ND	2.00	"	"	"	"	"	"	
,,4-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	0.500	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	2.00	"	"	"	"	"	"	
luoranthene	ND	0.330	"	"	"	"	"	"	

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CRAW00004245



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Bridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke


Reported:  
05/24/01 12:41

**Semivolatile Organic Compounds per EPA Method 8270C**  
**North Creek Analytical - Portland**

anlyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
PP-2-20 (P1D0788-07) Soil						Sampled: 04/24/01 Received: 04/24/01			
uorene	ND	0.330	mg/kg dry	1	EPA 8270C	05/07/01	05/09/01	1050283	
Hexachlorobenzene	ND	0.330	"	"	"	"	"	"	
Hexachlorobutadiene	ND	1.00	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	1.00	"	"	"	"	"	"	
Hexachloroethane	ND	1.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.330	"	"	"	"	"	"	
ophorone	ND	0.330	"	"	"	"	"	"	
Methylnaphthalene	ND	0.330	"	"	"	"	"	"	
2-Methylphenol	ND	0.330	"	"	"	"	"	"	
3,4-Methylphenol	ND	0.330	"	"	"	"	"	"	
aphthalene	ND	0.330	"	"	"	"	"	"	
Nitroaniline	ND	0.330	"	"	"	"	"	"	
3-Nitroaniline	ND	1.00	"	"	"	"	"	"	
Nitroaniline	ND	0.330	"	"	"	"	"	"	
trobenzene	ND	0.330	"	"	"	"	"	"	
2-Nitrophenol	ND	0.330	"	"	"	"	"	"	
4-Nitrophenol	ND	1.00	"	"	"	"	"	"	
-Nitrosodi-n-propylamine	ND	0.330	"	"	"	"	"	"	
-Nitrosodiphenylamine	ND	0.330	"	"	"	"	"	"	
Pentachlorophenol	ND	1.00	"	"	"	"	"	"	
benanthrene	ND	0.330	"	"	"	"	"	"	
enol	ND	0.330	"	"	"	"	"	"	
Pyrene	ND	0.330	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.330	"	"	"	"	"	"	
4,5-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
4,6-Trichlorophenol	ND	0.330	"	"	"	"	"	"	
Surr: 2-Fluorobiphenyl	77.0 %	44-146							
Surr: 2-Fluorophenol	75.2 %	42-126							
Surr: Nitrobenzene-d5	69.3 %	42-126							
Surr: Phenol-d6	73.8 %	42-131							
Surr: p-Terphenyl-d14	89.5 %	49-150							
Surr: 2,4,6-Tribromophenol	99.7 %	48-119							

North Creek Analytical - Portland

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CRAW00004246



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Ricke

Reported:  
05/24/01 12:41

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>S-5 (PID0788-05) Soil</b>					Sampled: 04/24/01 Received: 04/24/01			<b>R-05</b>	
acenaphthene	ND	67.0	ug/kg dry	5	EPA 8270m	05/07/01	05/08/01	1050259	
Acenaphthylene	ND	67.0	"	"	"	"	"	"	
Anthracene	ND	67.0	"	"	"	"	"	"	
benzo (a) anthracene	68.3	67.0	"	"	"	"	"	"	
benzo (a) pyrene	82.8	67.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	81.1	67.0	"	"	"	"	"	"	
benzo (ghi) perylene	74.2	67.0	"	"	"	"	"	"	
benzo (k) fluoranthene	71.8	67.0	"	"	"	"	"	"	
Chrysene	83.8	67.0	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	67.0	"	"	"	"	"	"	
fluoranthene	144	67.0	"	"	"	"	"	"	
fluorene	ND	67.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	67.0	"	"	"	"	"	"	
naphthalene	ND	67.0	"	"	"	"	"	"	
phenanthrene	168	67.0	"	"	"	"	"	"	
Pyrene	127	67.0	"	"	"	"	"	"	
curr: Fluorene-d10	110 %	40-150							
curr: Pyrene-d10	97.7 %	40-150							
curr: Benzo (a) pyrene-d12	115 %	40-150							

<b>P-3-24 (PID0788-08) Soil</b>					Sampled: 04/24/01 Received: 04/24/01				
acenaphthene	ND	13.4	ug/kg dry	1	EPA 8270m	05/07/01	05/08/01	1050259	
Acenaphthylene	ND	13.4	"	"	"	"	"	"	
anthracene	ND	13.4	"	"	"	"	"	"	
benzo (a) anthracene	ND	13.4	"	"	"	"	"	"	
Benzo (a) pyrene	ND	13.4	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	13.4	"	"	"	"	"	"	
benzo (ghi) perylene	ND	13.4	"	"	"	"	"	"	
benzo (k) fluoranthene	ND	13.4	"	"	"	"	"	"	
Chrysene	ND	13.4	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	13.4	"	"	"	"	"	"	
fluoranthene	ND	13.4	"	"	"	"	"	"	
Fluorene	ND	13.4	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	13.4	"	"	"	"	"	"	
naphthalene	ND	13.4	"	"	"	"	"	"	
phenanthrene	ND	13.4	"	"	"	"	"	"	
Pyrene	ND	13.4	"	"	"	"	"	"	
curr: Fluorene-d10	67.7 %	40-150							

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Philip Nerenberg, Laboratory Manager

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Environmental Laboratory Network

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CRAW00004247



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Ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
**North Creek Analytical - Portland**

Analyste	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
DP-3-24 (P1D0788-08) Soil					Sampled: 04/24/01 Received: 04/24/01				
rr: Pyrene-d10	93.3 %	40-150							
Surr: Benzo (a) pyrene-d12	95.2 %	40-150							

North Creek Analytical - Portland

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Environmental Laboratory Network

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CRAW00004248



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke


Reported:  
05/24/01 12:41

**Percent Dry Weight (Solids) per Standard Methods**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SS-6 (P1D0788-01) Soil									
Sampled: 04/24/01 Received: 04/24/01									
% Solids	81.8	1.00	% by Weight	1	NCA SOP	04/27/01	04/30/01	1040967	
SS-7 (P1D0788-02) Soil									
Sampled: 04/24/01 Received: 04/24/01									
% Solids	75.6	1.00	% by Weight	1	NCA SOP	04/27/01	04/30/01	1040967	
SS-8 (P1D0788-03) Soil									
Sampled: 04/24/01 Received: 04/24/01									
% Solids	85.5	1.00	% by Weight	1	NCA SOP	04/27/01	04/30/01	1040967	
SS-9 (P1D0788-04) Soil									
Sampled: 04/24/01 Received: 04/24/01									
% Solids	81.2	1.00	% by Weight	1	NCA SOP	04/27/01	04/30/01	1040967	
SS-5 (P1D0788-05) Soil									
Sampled: 04/24/01 Received: 04/24/01									
% Solids	96.6	1.00	% by Weight	1	NCA SOP	04/27/01	04/30/01	1040967	
SS-11 (P1D0788-06) Soil									
Sampled: 04/24/01 Received: 04/24/01									
% Solids	56.3	1.00	% by Weight	1	NCA SOP	04/27/01	04/30/01	1040967	
PP-2-20 (P1D0788-07) Soil									
Sampled: 04/24/01 Received: 04/24/01									
% Solids	87.2	1.00	% by Weight	1	NCA SOP	04/27/01	04/30/01	1040967	
PP-3-24 (P1D0788-08) Soil									
Sampled: 04/24/01 Received: 04/24/01									
% Solids	79.8	1.00	% by Weight	1	NCA SOP	04/27/01	04/30/01	1040967	

North Creek Analytical - Portland

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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41


Gasoline Hydrocarbons per SW-846 Method, Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
atch 1040881 - EPA 5035										
Blank (1040881-BLK1) Prepared & Analyzed: 04/25/01										
Gasoline Range Hydrocarbons	ND	4.00	mg/kg wet							
rr: 4-BFB	2.60		"	2.50		104	50-150			
LCS (1040881-BS1) Prepared & Analyzed: 04/25/01										
Gasoline Range Hydrocarbons	67.9	4.00	mg/kg wet	62.5		109	50-150			
rr: 4-BFB	3.29		"	2.50		132	50-150			
Duplicate (1040881-DUP1) Source: P1D0788-01 Prepared & Analyzed: 04/25/01										
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry		4.80			54.6	50	
rr: 4-BFB	2.86		"	3.06		93.5	50-150			

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CRAW00004250



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Diesel and Heavy Range Hydrocarbons per NWTRP Method - Quality Control**

**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1040884 - EPA 3550 Fuels**

**Blank (1040884-BLK1)**

Prepared & Analyzed: 04/25/01

Diesel Range Organics	ND	25.0	mg/kg wet							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
Surr: 1-Chlorooctadecane	5.24		"	4.80		109	50-150			

**CS (1040884-BS1)**

Prepared & Analyzed: 04/25/01

Diesel Range Organics	106	25.0	mg/kg wet	129		82.2	50-150			
Heavy Oil Range Hydrocarbons	55.4	50.0	"	79.0		70.1	50-150			
Surr: 1-Chlorooctadecane	4.44		"	4.80		92.5	50-150			

**Duplicate (1040884-DUP1)**

Source: PID0607-16

Prepared & Analyzed: 04/25/01

Diesel Range Organics	930	25.0	mg/kg dry		1390			39.7	50	
Heavy Oil Range Hydrocarbons	130	50.0	"		215			49.3	50	
Surr: 1-Chlorooctadecane	5.02		"	6.48		77.5	50-150			

**Duplicate (1040884-DUP2)**

Source: PID0788-05

Prepared & Analyzed: 04/25/01

Diesel Range Organics	ND	25.0	mg/kg dry		ND				50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND				50	
Surr: 1-Chlorooctadecane	4.88		"	4.97		98.2	50-150			

North Creek Analytical - Portland

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Environmental Laboratory Network

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CRAW00004251



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Final Method: EPA 8100-7000 Series Methods: Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1050018 - EPA 7471</b>										
<b>Blank (1050018-BLK1)</b>				Prepared & Analyzed: 05/01/01						
Mercury	ND	0.100	mg/kg wet							
<b>CS (1050018-BS1)</b>				Prepared & Analyzed: 05/01/01						
Mercury	0.994	0.100	mg/kg wet	1.00		99.4	80-120			
<b>Duplicate (1050018-DUP1)</b>				Source: P1D0775-01		Prepared & Analyzed: 05/01/01				
Mercury	ND	0.100	mg/kg dry		ND			62.7	40	Q-06
<b>Matrix Spike (1050018-MS1)</b>				Source: P1D0775-01		Prepared & Analyzed: 05/01/01				
Mercury	1.68	0.100	mg/kg dry	1.31	ND	124	75-125			
<b>Matrix Spike (1050018-MS2)</b>				Source: P1D0788-01		Prepared & Analyzed: 05/01/01				
Mercury	2.06	0.100	mg/kg dry	1.22	0.405	136	75-125			Q-02
<b>Batch 1050192 - EPA 3050</b>										
<b>Blank (1050192-BLK1)</b>				Prepared: 05/03/01 Analyzed: 05/05/01						
Antimony	ND	0.500	mg/kg wet							
Arsenic	ND	0.500	"							
Beryllium	ND	0.500	"							M-01
Cadmium	ND	0.500	"							M-01
Chromium	ND	0.500	"							M-01
Copper	ND	0.500	"							M-01
Lead	ND	0.500	"							M-01
Nickel	ND	1.00	"							M-01
Selenium	ND	0.500	"							
Silver	ND	0.500	"							M-01
Thallium	ND	0.500	"							
Zinc	ND	2.50	"							M-01

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Environmental Laboratory Network

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CRAW00004252



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541.383.9310 fax 541.382.7568

ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

### Total Metals per EPA 6000/7000 Series Methods - Quality Control

#### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1050192 - EPA 3050

##### LC'S (1050192-BS1)

Prepared: 05/03/01 Analyzed: 05/05/01

Antimony	5.04	0.500	mg/kg wet	5.00		101	80-120			
Asenic	9.15	0.500	"	10.0		91.5	80-120			
Beryllium	9.26	0.500	"	10.0		92.6	80-120			M-01
Cadmium	9.17	0.500	"	10.0		91.7	80-120			M-01
Chromium	11.0	0.500	"	10.0		110	80-120			M-01
Copper	10.5	0.500	"	10.0		105	80-120			M-01
Lead	9.58	0.500	"	10.0		95.8	80-120			M-01
Nickel	11.5	1.00	"	10.0		115	80-120			M-01
Selenium	8.32	0.500	"	10.0		83.2	80-120			
Silver	5.24	0.500	"	5.00		105	80-120			M-01
Thallium	4.66	0.500	"	5.00		93.2	80-120			
Zinc	9.62	2.50	"	10.0		96.2	80-120			M-01

##### Duplicate (1050192-DUP1)

Source: P1D0504-09

Prepared: 05/03/01 Analyzed: 05/05/01

Antimony	ND	0.500	mg/kg dry	ND				40		
Asenic	2.72	0.500	"	2.71				0.368	40	
Beryllium	ND	0.500	"	ND				0.687	40	M-01
Cadmium	ND	0.500	"	ND					40	M-01
Chromium	13.5	0.500	"	15.6				14.4	40	M-01
Copper	13.5	0.500	"	13.4				0.743	40	M-01
Lead	2.65	0.500	"	2.51				5.43	40	M-01
Nickel	16.2	1.00	"	18.8				14.9	40	M-01
Selenium	ND	0.500	"	ND				11.3	40	
Silver	ND	0.500	"	ND					40	M-01
Thallium	ND	0.500	"	ND				31.9	40	
Zinc	48.3	23.2	"	50.3				4.06	40	M-01

##### Matrix Spike (1050192-MS1)

Source: P1D0504-09

Prepared: 05/03/01 Analyzed: 05/05/01

Antimony	2.44	0.500	mg/kg dry	5.38	ND	45.4	75-125			Q-02
Asenic	11.2	0.500	"	10.8	2.71	78.6	75-125			
Beryllium	9.76	0.500	"	10.8	ND	87.7	75-125			M-01
Cadmium	9.12	0.500	"	10.8	ND	84.4	75-125			M-01
Chromium	22.6	0.500	"	10.8	15.6	64.8	75-125			M-01, Q-03
Copper	23.0	0.500	"	10.8	13.4	88.9	75-125			M-01
Lead	11.8	0.500	"	10.8	2.51	86.0	75-125			M-01
Nickel	26.6	1.00	"	10.8	18.8	72.2	75-125			M-01, Q-03

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CRAW00004253



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541 383 9310 fax 541 382 7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Total Metals per EPA 8000/2000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1050192 - EPA 3050

Matrix Spike (1050192-MS1)		Source: P1D0504-09		Prepared: 05/03/01		Analyzed: 05/05/01				
Selenium	8.40	0.500	mg/kg dry	10.8	ND	75.3	75-125			
Copper	5.32	0.500	"	5.38	ND	98.9	75-125			M-01
Barium	4.57	0.500	"	5.38	ND	83.9	75-125			
Zinc	51.1	2.50	"	10.8	50.3	7.41	75-125			Q-03

Matrix Spike (1050192-MS2)		Source: P1D0788-08		Prepared: 05/03/01		Analyzed: 05/05/01				
Antimony	1.16	0.500	mg/kg dry	6.27	ND	17.7	75-125			Q-02
Arsenic	19.7	0.500	"	12.5	8.08	93.0	75-125			
Barium	11.1	0.500	"	12.5	0.647	83.6	75-125			M-01
Cadmium	10.4	0.500	"	12.5	ND	83.2	75-125			M-01
Chromium	34.7	0.500	"	12.5	20.7	112	75-125			M-01
Copper	37.7	0.500	"	12.5	24.4	106	75-125			M-01
Lead	28.4	0.500	"	12.5	14.7	110	75-125			M-01
Nickel	33.9	1.00	"	12.5	20.3	109	75-125			M-01
Selenium	10.2	0.500	"	12.5	ND	77.8	75-125			
Copper	5.90	0.500	"	6.27	ND	94.1	75-125			M-01
Barium	5.42	0.500	"	6.27	ND	84.0	75-125			
Zinc	102	2.50	"	12.5	87.5	116	75-125			

Batch 1050213 - EPA 3050

Blank (1050213-BLK1)				Prepared: 05/04/01		Analyzed: 05/09/01				
Cadmium	ND	0.500	mg/kg wet							M-01
Chromium	1.18	0.500	"							B,M-01
Lead	ND	0.500	"							M-01
CS (1050213-BS1)				Prepared: 05/04/01		Analyzed: 05/09/01				
Cadmium	20.3	0.500	mg/kg wet	20.0		102	83.5-102			M-01
Chromium	49.0	0.500	"	50.0		98.0	87-105			M-01
Lead	106	0.500	"	100		106	82.3-106			M-01

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CRAW00004254



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Ricke

Reported:  
05/24/01 12:41


Total Metals per EPA 600/4-90-0101 Standard Methods - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1050213 - EPA 3050</b>									
<b>Sample 1050213-DUP1</b>		<b>Source: P1D0931-01</b>		<b>Prepared: 05/04/01 Analyzed: 05/09/01</b>					
Cadmium	ND	0.500	mg/kg dry		ND			40	M-01
Chromium	27.3	0.500	"		24.8		9.60	40	M-01
Copper	17.1	0.500	"		15.3		11.1	40	M-01
<b>Matrix Spike (1050213-MS1)</b>		<b>Source: P1D0931-01</b>		<b>Prepared: 05/04/01 Analyzed: 05/09/01</b>					
Cadmium	24.0	0.500	mg/kg dry	25.5	ND	94.1	75-125		M-01
Chromium	89.9	0.500	"	63.8	24.8	102	75-125		M-01
Lead	153	0.500	"	128	15.3	108	75-125		M-01

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CRAW00004255



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BridgeWater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Analysis: Organic Compounds per EPA Method 8260B - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1040947 - EPA 5035										
Blank (1040947-BLK1)				Prepared: 04/26/01 Analyzed: 04/30/01						
Acetone	ND	1000	ug/kg wet							
Benzene	ND	100	"							
Bromobenzene	ND	100	"							
Bromochloromethane	ND	100	"							
Bromodichloromethane	ND	100	"							
Bromoform	ND	100	"							
Bromomethane	ND	500	"							
2-Butanone	ND	1000	"							
Butylbenzene	ND	500	"							
n-Butylbenzene	ND	100	"							
tert-Butylbenzene	ND	100	"							
Carbon disulfide	ND	1000	"							
Carbon tetrachloride	ND	100	"							
Chlorobenzene	ND	100	"							
Chloroethane	ND	100	"							
Chloroform	ND	100	"							
Chloromethane	ND	500	"							
2-Chlorotoluene	ND	100	"							
Chlorotoluene	ND	100	"							
1,1-Dibromo-3-chloropropane	ND	500	"							
Dibromochloromethane	ND	100	"							
1,1-Dibromoethane	ND	100	"							
Bromomethane	ND	100	"							
1,2-Dichlorobenzene	ND	100	"							
1,3-Dichlorobenzene	ND	100	"							
1,4-Dichlorobenzene	ND	100	"							
1,1,1-Trichlorodifluoromethane	ND	500	"							
1,1-Dichloroethane	ND	100	"							
1,2-Dichloroethane	ND	100	"							
1,1,2-Trichloroethane	ND	100	"							
1,2-Dichloropropane	ND	100	"							
1,3-Dichloropropane	ND	100	"							
2,2-Dichloropropane	ND	100	"							
2,3-Dichloropropene	ND	100	"							

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CRAW00004256



**Reported:**  
05/24/01 12:41

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Prepared: 04/26/01 Analyzed: 04/30/01

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CRAW00004257



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ridgewater Group  
500 Kruse Way Suite 110  
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Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
tch 1040947 - EPA 5035										
S (1040947-BS1)				Prepared: 04/26/01		Analyzed: 04/29/01				
Benzene	2460	100	ug/kg wet	2500		98.4	80-135			
o-xylene	2460	100	"	2500		98.4	80-135			
1,1-Dichloroethene	2190	100	"	2500		87.6	60-150			
Toluene	2590	100	"	2500		104	80-130			
1,1,1-Trichloroethene	2160	100	"	2500		86.4	70-135			
Surrogate: 4-BFB	2260		"	2000		113	70-130			
Surrogate: 1,2-DCA-d4	2550		"	2000		128	70-130			
Surrogate: Dibromofluoromethane	2360		"	2000		118	70-130			
Surrogate: Toluene-d8	2530		"	2000		126	70-130			
Matrix Spike (1040947-MS1)				Source: P1D0531-02		Prepared: 04/26/01 Analyzed: 04/30/01				
Benzene	2720	100	ug/kg dry	3190	ND	85.3	60-135			
o-xylene	2870	100	"	3190	ND	90.0	65-125			
1,1-Dichloroethene	2060	100	"	3190	ND	64.6	60-135			
Toluene	2950	100	"	3190	ND	92.5	60-125			
1,1,1-Trichloroethene	2440	100	"	3190	ND	76.5	60-125			
Surrogate: 4-BFB	2680		"	2550		105	70-130			
Surrogate: 1,2-DCA-d4	2890		"	2550		113	70-130			
Surrogate: Dibromofluoromethane	2690		"	2550		105	70-130			
Surrogate: Toluene-d8	2860		"	2550		112	70-130			
Matrix Spike Dup (1040947-MSD1)				Source: P1D0531-02		Prepared: 04/26/01 Analyzed: 04/30/01				
Benzene	2640	100	ug/kg dry	3190	ND	82.8	60-135	2.99	25	
o-xylene	2910	100	"	3190	ND	91.2	65-125	1.38	25	
1,1-Dichloroethene	1850	100	"	3190	ND	58.0	60-135	10.7	25	Q-01
Toluene	2920	100	"	3190	ND	91.5	60-125	1.02	25	
1,1,1-Trichloroethene	2370	100	"	3190	ND	74.3	60-125	2.91	25	
Surrogate: 4-BFB	2670		"	2550		105	70-130			
Surrogate: 1,2-DCA-d4	2900		"	2550		114	70-130			
Surrogate: Dibromofluoromethane	2800		"	2550		110	70-130			
Surrogate: Toluene-d8	2920		"	2550		115	70-130			

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CRAW00004258



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ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Semi-Volatile Organic Compounds per EPA Method 8270C - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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tch 1050283 - EPA 3550

Blank (1050283-BLK1)

Prepared: 05/07/01 Analyzed: 05/09/01

Acenaphthene	ND	0.330	mg/kg wet
Acenaphthylene	ND	0.330	"
Acenaphthene	ND	0.330	"
Benzo (a) anthracene	ND	0.330	"
Benzo (a) pyrene	ND	0.330	"
Benzo (b) fluoranthene	ND	0.330	"
Benzo (ghi) perylene	ND	0.330	"
Benzo (k) fluoranthene	ND	0.330	"
Benzoic Acid	ND	1.00	"
Benzyl alcohol	ND	0.330	"
4-Bromophenyl phenyl ether	ND	0.330	"
Benzyl benzyl phthalate	ND	0.330	"
2-Chloro-3-methylphenol	ND	0.330	"
4-Chloroaniline	ND	2.00	"
1,2-Bis(2-chloroethoxy)methane	ND	0.330	"
1,2-Bis(2-chloroethyl)ether	ND	0.330	"
1,2-Bis(2-chloroisopropyl)ether	ND	0.330	"
2-Chloronaphthalene	ND	0.330	"
2-Chlorophenol	ND	0.330	"
2-Chlorophenyl phenyl ether	ND	0.330	"
Chrysene	ND	0.330	"
n-butyl phthalate	ND	1.00	"
n-octyl phthalate	ND	0.330	"
Dibenzo (a,h) anthracene	ND	0.330	"
Dibenzofuran	ND	0.330	"
1,2-Dichlorobenzene	ND	1.00	"
1,3-Dichlorobenzene	ND	1.00	"
1,4-Dichlorobenzene	ND	1.00	"
1,2-Dichlorobenzidine	ND	1.00	"
1,2-Dichlorophenol	ND	0.330	"
Diethyl phthalate	ND	0.330	"
1,2-Dimethylphenol	ND	1.00	"
n-ethyl phthalate	ND	0.330	"
4,6-Dinitro-2-methylphenol	ND	1.00	"
2,4-Dinitrophenol	ND	2.00	"
2,4-Dinitrotoluene	ND	0.500	"

North Creek Analytical - Portland

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CRAW00004259



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ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Environmental Organic Compounds per EPA Method 8260, Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1050283 - EPA 3550										
Blank (1050283-BLK1)										
				Prepared: 05/07/01 Analyzed: 05/09/01						
2,6-Dinitrotoluene	ND	0.500	mg/kg wet							
(2-ethylhexyl)phthalate	ND	2.00	"							
fluoranthene	ND	0.330	"							
Fluorene	ND	0.330	"							
1-methylchlorobenzene	ND	0.330	"							
1-methylchlorobutadiene	ND	1.00	"							
1-methylchlorocyclopentadiene	ND	1.00	"							
Hexachloroethane	ND	1.00	"							
benzo (1,2,3-cd) pyrene	ND	0.330	"							
phorone	ND	0.330	"							
2-Methylnaphthalene	ND	0.330	"							
1-Methylphenol	ND	0.330	"							
4-Methylphenol	ND	0.330	"							
Naphthalene	ND	0.330	"							
o-Nitroaniline	ND	0.330	"							
m-Nitroaniline	ND	1.00	"							
p-Nitroaniline	ND	0.330	"							
Nitrobenzene	ND	0.330	"							
o-Nitrophenol	ND	0.330	"							
p-Nitrophenol	ND	1.00	"							
N-Nitrosodi-n-propylamine	ND	0.330	"							
N-Nitrosodiphenylamine	ND	0.330	"							
o-methylchlorophenol	ND	1.00	"							
Phenanthrene	ND	0.330	"							
Phenol	ND	0.330	"							
benzene	ND	0.330	"							
1,2,4-Trichlorobenzene	ND	0.330	"							
2,4,5-Trichlorophenol	ND	0.330	"							
1,6-Trichlorophenol	ND	0.330	"							
Surr: 2-Fluorobiphenyl	2.04		"	2.50		81.6	44-146			
Surr: 2-Fluorophenol	3.85		"	5.00		77.0	42-126			
Surr: Nitrobenzene-d5	1.90		"	2.50		76.0	42-126			
Surr: Phenol-d6	3.73		"	5.00		74.6	42-131			
Surr: p-Terphenyl-d14	2.31		"	2.50		92.4	49-150			
Surr: 2,4,6-Tribromophenol	4.48		"	5.00		89.6	48-119			

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*DR*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004260



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541.383 9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Semi-volatile Organic Compounds per EPA Method 8270C - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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atch 1050283 - EPA 3550

CS (1050283-BS1)

Prepared: 05/07/01 Analyzed: 05/09/01

Acenaphthene	2.80	0.330	mg/kg wet	2.50		112	47-145		
Chloro-3-methylphenol	4.76	0.330	"	5.00		95.2	22-147		
Chlorophenol	4.06	0.330	"	5.00		81.2	23-134		
1,4-Dichlorobenzene	1.95	1.00	"	2.50		78.0	20-124		
4-Dinitrotoluene	2.89	0.500	"	2.50		116	39-139		
Nitrophenol	5.70	1.00	"	5.00		114	0-132		
N-Nitrosodi-n-propylamine	2.62	0.330	"	2.50		105	0-230		
Pentachlorophenol	5.13	1.00	"	5.00		103	14-176		
Phenol	4.11	0.330	"	5.00		82.2	5-112		
1,2,4-Trichlorobenzene	2.38	0.330	"	2.50		95.2	52-130		
1,2,4-Trichlorobenzene	2.36	0.330	"	2.50		94.4	44-142		
Surr: 2-Fluorobiphenyl	1.78		"	2.50		71.2	44-146		
Surr: 2-Fluorophenol	4.20		"	5.00		84.0	42-126		
Surr: Nitrobenzene-d5	1.56		"	2.50		62.4	42-126		
Surr: Phenol-d6	3.97		"	5.00		79.4	42-131		
Surr: p-Terphenyl-d14	1.96		"	2.50		78.4	49-150		
Surr: 2,4,6-Tribromophenol	5.11		"	5.00		102	48-119		

Matrix Spike (1050283-MS1)

Source: P1D0788-01

Prepared: 05/07/01 Analyzed: 05/09/01

Acenaphthene	2.17	0.330	mg/kg dry	3.06	ND	70.9	47-145		
4-Chloro-3-methylphenol	5.52	0.330	"	6.12	ND	90.2	22-147		
Chlorophenol	4.23	0.330	"	6.12	ND	69.1	23-134		
1,4-Dichlorobenzene	ND	1.00	"	3.06	ND	22.1	20-124		
2,4-Dinitrotoluene	2.06	0.500	"	3.06	ND	67.3	39-139		
4-Nitrophenol	6.42	1.00	"	6.12	ND	105	0-132		
N-Nitrosodi-n-propylamine	1.77	0.330	"	3.06	ND	57.8	0-230		
Pentachlorophenol	4.68	1.00	"	6.12	ND	76.5	14-176		
Phenol	4.53	0.330	"	6.12	ND	74.0	5-112		
1,2,4-Trichlorobenzene	2.20	0.330	"	3.06	0.334	61.0	52-130		
2,4,6-Trichlorobenzene	1.25	0.330	"	3.06	ND	40.8	44-142		Q-01
Surr: 2-Fluorobiphenyl	2.27		"	3.06		74.2	44-146		
Surr: 2-Fluorophenol	4.10		"	6.12		67.0	42-126		
Surr: Nitrobenzene-d5	1.91		"	3.06		62.4	42-126		
Surr: Phenol-d6	4.18		"	6.12		68.3	42-131		
Surr: p-Terphenyl-d14	2.70		"	3.06		88.2	49-150		
Surr: 2,4,6-Tribromophenol	6.15		"	6.12		100	48-119		

North Creek Analytical - Portland

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*BR*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004261



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541.383.9310 fax 541.382.7588

ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

Semivolatile Organic Compounds per EPA Method 8210C Quality Control

### North Creek Analytical - Portland

analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1050283 - EPA 3550

Matrix Spike Dup (1050283-MSD1)		Source: PID0788-01		Prepared: 05/07/01		Analyzed: 05/09/01				
Acenaphthene	2.56	0.330	mg/kg dry	3.06	ND	83.7	47-145	16.5	60	
chloro-3-methylphenol	5.61	0.330	"	6.12	ND	91.7	22-147	1.62	60	
chlorophenol	4.88	0.330	"	6.12	ND	79.7	23-134	14.3	60	
1,4-Dichlorobenzene	1.46	1.00	"	3.06	ND	47.7	20-124	73.3	60	Q-01
2,4-Dinitrotoluene	2.15	0.500	"	3.06	ND	70.3	39-139	4.28	60	
nitrophenol	6.68	1.00	"	6.12	ND	109	0-132	3.97	60	
N-Nitrosodi-n-propylamine	2.32	0.330	"	3.06	ND	75.8	0-230	26.9	60	
Pentachlorophenol	3.53	1.00	"	6.12	ND	57.7	14-176	28.0	60	
phenol	4.89	0.330	"	6.12	ND	79.9	5-112	7.64	60	
toluene	2.47	0.330	"	3.06	0.334	69.8	52-130	11.6	60	
1,2,4-Trichlorobenzene	2.01	0.330	"	3.06	ND	65.7	44-142	46.6	60	
Surrogate: 2-Fluorobiphenyl	2.65		"	3.06		86.6	44-146			
Surrogate: 2-Fluorophenol	4.92		"	6.12		80.4	42-126			
Surrogate: Nitrobenzene-d5	2.37		"	3.06		77.5	42-126			
Surrogate: Phenol-d6	4.68		"	6.12		76.5	42-131			
Surrogate: p-Terphenyl-d14	2.84		"	3.06		92.8	49-150			
Surrogate: 2,4,6-Tribromophenol	6.26		"	6.12		102	48-119			

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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Environmental Laboratory Network

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CRAW00004262



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541 383 9310 fax 541 382 7588

Bridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
05/24/01 12:41

**Poly nuclear Aromatic Compounds per EPA 821-M-SM - Quality Control**

**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1050259 - EPA 3550**

**Blank (1050259-BLK1)**

Prepared: 05/07/01 Analyzed: 05/08/01

Acenaphthene	ND	13.4	ug/kg wet							
Acenaphthylene	ND	13.4	"							
Anthracene	ND	13.4	"							
Benzo (a) anthracene	ND	13.4	"							
Benzo (a) pyrene	ND	13.4	"							
Benzo (b) fluoranthene	ND	13.4	"							
Benzo (ghi) perylene	ND	13.4	"							
Benzo (k) fluoranthene	ND	13.4	"							
Brysene	ND	13.4	"							
Benzo (a,h) anthracene	ND	13.4	"							
Fluoranthene	ND	13.4	"							
Quorene	ND	13.4	"							
Benzo (1,2,3-cd) pyrene	ND	13.4	"							
Naphthalene	ND	13.4	"							
Phenanthrene	ND	13.4	"							
Pyrene	ND	13.4	"							
Surr: Fluorene-d10	79.7		"	83.3		95.7	40-150			
Surr: Pyrene-d10	102		"	83.3		122	40-150			
Surr: Benzo (a) pyrene-d12	111		"	83.3		133	40-150			

**LCS (1050259-BS1)**

Prepared: 05/07/01 Analyzed: 05/08/01

Q-23

Acenaphthene	157	13.4	ug/kg wet	167		94.0	33-139			
Benzo (a) pyrene	196	13.4	"	167		117	45-149			
Pyrene	148	13.4	"	167		88.6	39-138			
Surr: Fluorene-d10	79.5		"	83.3		95.4	40-150			
Surr: Pyrene-d10	93.5		"	83.3		112	40-150			
Surr: Benzo (a) pyrene-d12	108		"	83.3		130	40-150			

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004263



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Bridgewater Group  
 500 Kruse Way Suite 110  
 Lake Oswego, OR 97035

Project: Crawford St.  
 Project Number: na  
 Project Manager: Ross Rieke

Reported:  
 05/24/01 12:41

Percent Dry Weight Solids per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1040967 - Dry Weight										
Duplicate (1040967-DUP1) Source: PID0596-03 Prepared: 04/27/01 Analyzed: 04/30/01										
% Solids	84.0	1.00 % by Weight			83.8			0.238	20	
Duplicate (1040967-DUP2) Source: PID0669-01 Prepared: 04/27/01 Analyzed: 04/30/01										
% Solids	18.8	1.00 % by Weight			19.0			1.06	20	
Duplicate (1040967-DUP3) Source: PID0714-23 Prepared: 04/27/01 Analyzed: 04/30/01										
% Solids	81.6	1.00 % by Weight			88.0			7.55	20	

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*AN*

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CRAW00004264



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Ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke


Reported:  
05/24/01 12:41

#### Notes and Definitions

- Q Analyte detected in the method blank.
- 4-01 Analysis performed by EPA 200.8/6020 due to matrix interference or to meet lower reporting limit.
- Q-01 The spike recovery, and/or RPD, for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
- Q-02 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- Q-03 The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.
- Q-06 Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
- Q-23 The Matrix Spike/Duplicate for this batch could not be reported. Source sample contains high levels of target analyte, non-target analyte, and/or matrix interference requiring high dilution.
- Q-25 The method blank contains analyte at a concentration above the MRL. This concentration is less than 5% of the sample result, which is negligible according to method criteria.
- K-05 Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- I-08 Surrogate recovery is above control limits. Since no analytes were detected in the sample, the quality of the data has not been affected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- JR Not Reported
- dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
- wet Sample results reported on a wet weight basis (as received)
- RPD Relative Percent Difference

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

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CRAW00004265



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541 383 9310 fax 541 382 7588

Bridgewater Group

1500 Kruse Way Suite 110

Lake Oswego, OR 97035

Project: Crawford St.

Project Number: na

Project Manager: Ross Rieke

Reported:

05/24/01 12:41

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*PN*

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
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CRAW00004266



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 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 FAX 382-7588

# CHAIN OF CUSTODY REPORT

Work Order #:

P1 D0788

CLIENT: <b>Bridgeway Group</b>		INVOICE TO: <b>Same</b>		TURNAROUND REQUEST in Business Days*																	
REPORT TO: <b>Ross Riecke</b>				Organic & Inorganic Analyses																	
ADDRESS: <b>4500 SW Kinnearway Suite 110 Lake Oswego OR 97035</b>				<input checked="" type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <1																	
PHONE: <b>503 675 5152</b> FAX:		P.O. NUMBER:		STD. Petroleum Hydrocarbon Analyses																	
PROJECT NAME: <b>Crawford St</b>		REQUESTED ANALYSES		<input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <1 STD. Please Specify <b>OTHER</b>																	
PROJECT NUMBER:																					
SAMPLED BY: <b>DR Dykes</b>				* Turnaround Request less than standard may incur Rush Charges																	
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PAH	PP metals	PP TELP metals	TEL P-6	TEL P-6 Pb	TEL P-6 Cu	TEL P-6 Ni	TEL P-6 Zn	TEL P-6 Pb	TEL P-6 Cu	TEL P-6 Ni	TEL P-6 Zn	TEL P-6 Pb	TEL P-6 Cu	TEL P-6 Ni	TEL P-6 Zn	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NC. ID
1. <b>SS-6</b>	<b>4/24/01 10:30</b>		X	*	X		X							X				<b>SS-1</b>	<b>2</b>		
2. <b>SS-7</b>	<b>10:45</b>		X	*	X		X							X					<b>2</b>		
3. <b>SS-8</b>	<b>11:30</b>		X	*	X		X							X					<b>2</b>		
4. <b>SS-9</b>	<b>11:40</b>		X	*	X		X							X					<b>2</b>		
5. <b>SS-5</b>	<b>11:20</b>	X			X	X	*							X					<b>2</b>		
6. <b>SS-11</b>	<b>11:00</b>										X	*	X						<b>2</b>		
7. <b>PP-2-24</b>	<b>15:45</b>				X		X	X						X					<b>2</b>		
8. <b>PP-3-20</b>	<b>13:25</b>	X	X	*	X			X						X					<b>2</b>		
9.																					
10.																					
11.																					
12.																					
13.																					
14.																					
15.																					

RELINQUISHED BY: <b>DR Dykes</b>	DATE: <b>4/24/01</b>	RECEIVED BY: <b>Sarah Passage</b>	DATE: <b>4/24/01</b>
PRINT NAME: <b>Dennis R Dykes</b>	TIME: <b>1830</b>	PRINT NAME: <b>Sarah Passage</b>	TIME: <b>1830</b>
RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
PRINT NAME:	TIME:	PRINT NAME:	TIME:

ADDITIONAL REMARKS: **\* Hold TELP analyses - will be determined based on total metals**

TEMP: \_\_\_\_\_

CRAW00004267



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ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Ricke

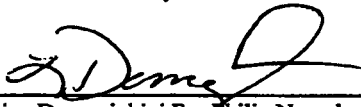
**Reported:**  
06/08/01 09:52

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-06	P1E0640-01	Soil	05/21/01 00:00	05/21/01 16:19
SS-07	P1E0640-02	Soil	05/21/01 00:00	05/21/01 16:19
S-08	P1E0640-03	Soil	05/21/01 00:00	05/21/01 16:19
SS-09	P1E0640-04	Soil	05/21/01 00:00	05/21/01 16:19
S-05	P1E0640-05	Soil	05/21/01 00:00	05/21/01 16:19
S-11	P1E0640-06	Soil	05/21/01 00:00	05/21/01 16:19
PP-3-24	P1E0640-07	Soil	05/21/01 00:00	05/21/01 16:19
S-01	P1E0640-08	Soil	05/21/01 00:00	05/21/01 16:19
SS-02	P1E0640-09	Soil	05/21/01 00:00	05/21/01 16:19
S-03	P1E0640-10	Soil	05/21/01 00:00	05/21/01 16:19
S-04	P1E0640-11	Soil	05/21/01 00:00	05/21/01 16:19
SS-10	P1E0640-12	Soil	05/21/01 00:00	05/21/01 16:19

North Creek Analytical - Portland

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Lisa Domenighini For Philip Nerenberg, Laboratory Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

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CRAW00004268



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541 383 9310 fax 541 382 7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
06/08/01 09:52

**TCLP Metals per EPA 1311/6000/7000 Series Methods**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>3-06 (P1E0640-01) Soil</b>						Sampled: 05/21/01 Received: 05/21/01			
Cad	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Mercury	ND	0.000200	"	1	1311/7471A	05/31/01	05/31/01	1051144	
<b>3-07 (P1E0640-02) Soil</b>						Sampled: 05/21/01 Received: 05/21/01			
Arsenic	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Mercury	ND	0.000200	"	1	1311/7471A	05/31/01	05/31/01	1051144	
<b>3S-08 (P1E0640-03) Soil</b>						Sampled: 05/21/01 Received: 05/21/01			
Arsenic	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Chromium	ND	0.500	"	"	"	"	"	"	M-01
Copper	ND	0.500	"	"	"	"	"	"	M-01
Lead	ND	0.500	"	"	"	"	"	"	M-01
Mercury	ND	0.000200	"	1	1311/7471A	05/31/01	05/31/01	1051144	
Zinc	1.45	0.500	"	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
<b>3S-09 (P1E0640-04) Soil</b>						Sampled: 05/21/01 Received: 05/21/01			
Arsenic	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Lead	ND	0.500	"	"	"	"	"	"	M-01
Zinc	0.765	0.500	"	"	"	"	"	"	M-01
<b>3S-05 (P1E0640-05) Soil</b>						Sampled: 05/21/01 Received: 05/21/01			
Chromium	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Lead	7.39	0.500	"	"	"	"	"	"	M-01
<b>SS-05 (P1E0640-05RE1) Soil</b>						Sampled: 05/21/01 Received: 05/21/01			
Lead	7.73	0.0500	mg/l	10	1311/6010A	06/06/01	06/08/01	1060249	M-01

North Creek Analytical - Portland

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Lisa Domenighini For Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004269



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541 383 9310 fax 541 382 7588

Bridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
06/08/01 09:52

**TCLP Metals per EPA 1311/6000/7000 Series Methods**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>SS-11 (P1E0640-06) Soil</b>					Sampled: 05/21/01 Received: 05/21/01				
arsenic	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Chromium	ND	0.500	"	"	"	"	"	"	M-01
Copper	ND	0.500	"	"	"	"	"	"	M-01
nickel	ND	0.500	"	"	"	"	"	"	M-01
zinc	0.757	0.500	"	"	"	"	"	"	M-01
<b>P-3-24 (P1E0640-07) Soil</b>					Sampled: 05/21/01 Received: 05/21/01				
arsenic	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
<b>P-0-01 (P1E0640-08) Soil</b>					Sampled: 05/21/01 Received: 05/21/01				
arsenic	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Cadmium	ND	0.500	"	"	"	"	"	"	M-01
Chromium	ND	0.500	"	"	"	"	"	"	M-01
Copper	0.943	0.500	"	"	"	"	"	"	M-01
Lead	ND	0.500	"	"	"	"	"	"	M-01
Nickel	1.07	0.500	"	"	"	"	"	"	M-01
zinc	3.22	0.500	"	"	"	"	"	"	M-01
<b>SS-02 (P1E0640-09) Soil</b>					Sampled: 05/21/01 Received: 05/21/01				
arsenic	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Chromium	ND	0.500	"	"	"	"	"	"	M-01
Copper	ND	0.500	"	"	"	"	"	"	M-01
Lead	ND	0.500	"	"	"	"	"	"	M-01
Nickel	ND	0.500	"	"	"	"	"	"	M-01
zinc	1.27	0.500	"	"	"	"	"	"	M-01

North Creek Analytical - Portland

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

  
Lisa Domenighini For Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004270



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
06/08/01 09:52

**TCLP Metals per EPA 1311/6000/7000 Series Methods**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
<b>SS-03 (P1E0640-10) Soil</b>						Sampled: 05/21/01 Received: 05/21/01			
Arsenic	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Chromium	ND	0.500	"	"	"	"	"	"	M-01
Copper	ND	0.500	"	"	"	"	"	"	M-01
Lead	ND	0.500	"	"	"	"	"	"	M-01
Nickel	ND	0.500	"	"	"	"	"	"	M-01
Zinc	1.40	0.500	"	"	"	"	"	"	M-01
<b>S-04 (P1E0640-11) Soil</b>						Sampled: 05/21/01 Received: 05/21/01			
Arsenic	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Chromium	ND	0.500	"	"	"	"	"	"	M-01
Copper	ND	0.500	"	"	"	"	"	"	M-01
Lead	ND	0.500	"	"	"	"	"	"	M-01
Nickel	ND	0.500	"	"	"	"	"	"	M-01
Zinc	1.83	0.500	"	"	"	"	"	"	M-01
<b>SS-10 (P1E0640-12) Soil</b>						Sampled: 05/21/01 Received: 05/21/01			
Chromium	ND	0.500	mg/l	10	1311/6010A	05/25/01	05/30/01	1051020	M-01
Lead	1.10	0.500	"	"	"	"	"	"	M-01

North Creek Analytical - Portland

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Lisa Domenighini For Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004271



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
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Tidgewater Group  
 1000 Kruse Way Suite 110  
 Lake Oswego, OR 97035

Project: Crawford St.  
 Project Number: na  
 Project Manager: Ross Rieke

Reported:  
 06/08/01 09:52

**ICLIP Metals per EPA 1311/6000/7000 Series Methods - Quality Control**

**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**tch 1051020 - EPA 1311/3005**

**Blank (1051020-BLK1)**

Prepared: 05/25/01 Analyzed: 05/30/01

Arsenic	ND	0.500	mg/l							M-01
Barium	ND	0.500	"							M-01
Bismuth	ND	0.500	"							M-01
Copper	ND	0.500	"							M-01
Lead	ND	0.500	"							M-01
Nickel	ND	0.500	"							M-01
Zinc	ND	0.500	"							M-01

**S (1051020-BS1)**

Prepared: 05/25/01 Analyzed: 05/30/01

Arsenic	4.92	0.500	mg/l	5.00		98.4	75-125			M-01
Cadmium	1.03	0.500	"	1.00		103	75-125			M-01
Chromium	5.79	0.500	"	5.00		116	75-125			M-01
Copper	5.39	0.500	"	5.00		108	75-125			M-01
Lead	4.90	0.500	"	5.00		98.0	75-125			M-01
Nickel	5.44	0.500	"	5.00		109	75-125			M-01
Selenium	5.29	0.500	"	5.00		106	75-125			M-01

**Matrix Spike (1051020-MS1)**

Source: P1E0640-01

Prepared: 05/25/01 Analyzed: 05/30/01

Arsenic	4.99	0.500	mg/l	5.00	ND	99.8	50-150			M-01
Barium	1.04	0.500	"	1.00	ND	104	50-150			M-01
Bismuth	5.79	0.500	"	5.00	ND	116	50-150			M-01
Copper	5.45	0.500	"	5.00	ND	109	50-150			M-01
Lead	5.08	0.500	"	5.00	ND	102	50-150			M-01
Nickel	5.50	0.500	"	5.00	ND	110	50-150			M-01
Zinc	6.40	0.500	"	5.00	0.994	108	50-150			M-01

**tch 1051144 - EPA 1311**

**Blank (1051144-BLK1)**

Prepared & Analyzed: 05/31/01

Mercury	ND	0.000200	mg/l							
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North Creek Analytical - Portland

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Tina Domenighini For Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network

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CRAW00004272



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541 383 9310 fax 541 382 7588

Bridgewater Group	Project: Crawford St.	Reported:
4500 Kruse Way Suite 110	Project Number: na	06/08/01 09:52
Lake Oswego, OR 97035	Project Manager: Ross Rieke	

Heavy Metals - EPA 1311/3005/7000 Series Methods - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1051144 - EPA 1311										
CS (1051144-BS1)				Prepared & Analyzed: 05/31/01						
Mercury	0.00518	0.000200	mg/l	0.00500		104	75-125			
Matrix Spike (1051144-MS1)				Source: P1E0640-02 Prepared & Analyzed: 05/31/01						
Mercury	0.00512	0.000200	mg/l	0.00500	ND	102	50-150			
Batch 1060249 - EPA 1311/3005										
Blank (1060249-BLK1)				Prepared: 06/06/01 Analyzed: 06/08/01						
Lead	ND	0.0500	mg/l							M-01
CS (1060249-BS1)				Prepared: 06/06/01 Analyzed: 06/08/01						
Lead	5.19	0.0500	mg/l	5.00		104	75-125			M-01
Matrix Spike (1060249-MS1)				Source: P1E0640-05RE1 Prepared: 06/06/01 Analyzed: 06/08/01						
Lead	12.8	0.0500	mg/l	5.00	7.73	101	50-150			M-01

North Creek Analytical - Portland

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Lisa Domenighini For Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004273



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Bridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
06/08/01 09:52

#### Notes and Definitions

M-01 Analysis performed by EPA 200.8/6020 due to matrix interference or to meet lower reporting limit.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.

wet Sample results reported on a wet weight basis (as received)

RPD Relative Percent Difference

North Creek Analytical - Portland

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

  
Lisa Domenighini For Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

7 of 7

CRAW00004274



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**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

July, 2001

Doss Rieke  
Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

RE: Crawford St.

Enclosed are the results of analyses for samples received by the laboratory on 06/20/01 15:03. If  
you have any questions concerning this report, please feel free to contact me.

Sincerely,

  
Philip Nerenberg  
Laboratory Manager

Work Orders included in this report:  
**P1F0599**

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

CRAW00004275



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke


Reported:  
07/06/01 12:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W1-062001	PIF0599-01	Water	06/20/01 10:15	06/20/01 15:03

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

1 of 5

CRAW00004276



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541.383.9310 fax 541.382.7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
07/06/01 12:02

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
1-062001 (P1F0599-01) Water						Sampled: 06/20/01 Received: 06/20/01			
Acenaphthene	ND	0.100	ug/l	1	EPA 8270m	06/27/01	07/02/01	1060910	
Acenaphthylene	ND	0.100	"	"	"	"	"	"	
Anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.100	"	"	"	"	"	"	
Chrysene	ND	0.100	"	"	"	"	"	"	
Di benzo (a,h) anthracene	ND	0.200	"	"	"	"	"	"	
Fluoranthene	ND	0.100	"	"	"	"	"	"	
Fluorene	ND	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.100	"	"	"	"	"	"	
Phthalene	ND	0.100	"	"	"	"	"	"	
Phenanthrene	ND	0.100	"	"	"	"	"	"	
Pyrene	ND	0.100	"	"	"	"	"	"	
Surr: Fluorene-d10	54.7 %	25-105							
Surr: Pyrene-d10	90.7 %	30-130							
Surr: Benzo (a) pyrene-d12	72.0 %	22-120							

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

2 of 5

CRAW00004277



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Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
07/06/01 12:02

Polynuclear Aromatic Compounds per EPA 8210M-SIM Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1060910 - EPA 3520/600 Series

##### Blank (1060910-BLK1)

Prepared: 06/27/01 Analyzed: 07/02/01

Acenaphthene	ND	0.100	ug/l
acenaphthylene	ND	0.100	"
anthracene	ND	0.100	"
Benzo (a) anthracene	ND	0.100	"
Benzo (a) pyrene	ND	0.100	"
Benzo (b) fluoranthene	ND	0.100	"
Benzo (ghi) perylene	ND	0.100	"
Benzo (k) fluoranthene	ND	0.100	"
biphenylene	ND	0.100	"
Benzo (a,h) anthracene	ND	0.200	"
Fluoranthene	ND	0.100	"
fluorene	ND	0.100	"
Indeno (1,2,3-cd) pyrene	ND	0.100	"
Naphthalene	ND	0.100	"
Phenanthrene	ND	0.100	"
pyrene	ND	0.100	"

Surr: Fluorene-d10	1.36	"	2.50	54.4	25-105
Surr: Pyrene-d10	2.20	"	2.50	88.0	30-130
Surr: Benzo (a) pyrene-d12	1.96	"	2.50	78.4	22-120

##### LCS (1060910-BS1)

Prepared: 06/27/01 Analyzed: 07/02/01

Acenaphthene	1.63	0.100	ug/l	2.50	65.2	26-135
Benzo (a) pyrene	1.98	0.100	"	2.50	79.2	38-137
Pyrene	1.99	0.100	"	2.50	79.6	33-133

Surr: Fluorene-d10	1.51	"	2.50	60.4	25-105
Surr: Pyrene-d10	2.42	"	2.50	96.8	30-130
Surr: Benzo (a) pyrene-d12	1.97	"	2.50	78.8	22-120

North Creek Analytical - Portland

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Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004278



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541 383 9310 fax 541 382 7588

Ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
07/06/01 12:02

#### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.  
wet Sample results reported on a wet weight basis (as received)  
RPD Relative Percent Difference

North Creek Analytical - Portland

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*A*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

5 of 5

CRAW00004279

# CHAIN OF CUSTODY REPORT

Work Order #: **PIF0599**

CLIENT: <b>Bridgewater Group</b>			INVOICE TO: <b>Ross Risk Bridgewater Group</b>			<b>TURNAROUND REQUEST in Business Days*</b> Organic & Inorganic Analyses <input checked="" type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. Petroleum Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. <input type="checkbox"/> OTHER Please Specify _____ <small>*Turnaround Requests less than standard may incur Rush Charges.</small>										
REPORT TO: <b>Ross Risk</b>			P.O. NUMBER:													
ADDRESS: <b>Bridgewater Group</b>																
PHONE: <b>503 675 5252 ext 2</b> FAX:																
PROJECT NAME: <b>Granford Street</b>			REQUESTED ANALYSES													
PROJECT NUMBER:																
SAMPLED BY: <b>DAD/101</b>																
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	8270 9271	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA ID
1. <b>W1-062001</b>	<b>6/20/01 10:15</b>	<b>X</b>											<b>W</b>	<b>1</b>		
2. <b>W2-062001</b>	<b>" 11:00</b>	<b>X</b>											<b>W</b>	<b>1</b>		
3. <b>W3-062001</b>	<b>" 13:00</b>	<b>X</b>											<b>W</b>	<b>1</b>		
4.																
5.																
6.																
7.																
8.																
9.																
10.																
11.																
12.																
13.																
14.																
15.																
RELINQUISHED BY: <b>DAD/101</b>		DATE: <b>6/20/01</b>		RECEIVED BY: <b>Sarah Tassara</b>		DATE: <b>6/20/01</b>										
PRINT NAME: <b>Derek R. Dykes</b>		FIRM: <b>BPOW</b>		TIME: <b>1500</b>		PRINT NAME: <b>Sarah Tassara</b>		FIRM: <b>NCA</b>		DATE: <b>1503</b>						
RELINQUISHED BY:		DATE:		RECEIVED BY:		DATE:										
PRINT NAME:		FIRM:		TIME:		PRINT NAME:		FIRM:		TIME:						
ADDITIONAL REMARKS:															TEMP:	PAGE OF
COC REV 3/99																



August 1, 2001

Service Request No: K2105076

Mat Cusma  
Schnitzer Steel Products Company  
P.O. Box 10047  
Portland, OR 97296-0047

**Re: Crawford Street**

Dear Mat:

Enclosed are the results of the sample(s) submitted to our laboratory on July 18, 2001. For your reference, these analyses have been assigned our service request number K2105076.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Harvey Jachy  
Project Chemist

HJ/ee

Page 1 of 10

### Acronyms

ASTM	American Society for Testing and Materials
AZLA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

00002

### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- B The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- E The reported value is estimated because of the presence of matrix interference.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.
- \* The duplicate analysis not within control limits. See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- o The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- i The MRL/MDL has been elevated due to a chromatographic interference.
- C See case narrative.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- i The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- r The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- ) The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- ! The chromatographic fingerprint does not resemble a petroleum product.

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## Analytical Results

Client: Schnitzer Steel Products Co.  
Project: Crawford Street  
Sample Matrix: Soil

Service Request: K2105076

## Total Solids

Prep Method: NONE  
Analysis Method: 160.3M  
Test Notes:

Units: PERCENT  
Basis: WET

Sample Name	Lab Code	Date Collected	Date Received	Date Analyzed	Result	Result Notes
CS-01	K2105076-001	07/17/2001	07/18/2001	07/19/2001	99.8	
CS-02	K2105076-002	07/17/2001	07/18/2001	07/19/2001	97.3	
CS-03	K2105076-003	07/17/2001	07/18/2001	07/19/2001	99.8	
CS-04	K2105076-004	07/17/2001	07/18/2001	07/19/2001	99.9	

Printed 07/20/2001 11:08

SuperSet Reference: W0104274

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Page 1 of 1

CRAW00004284

**COLUMBIA ANALYTICAL SERVICES, INC.**

**Analytical Report**

**Client:** Schnitzer Steel Products Co.  
**Project:** Crawford Street  
**Sample Matrix:** Soil

**Service Request:** K2105076  
**Date Collected:** 7/17/01  
**Date Received:** 7/18/01  
**Date TCLP Performed:** 7/23/01  
**Date Extracted:** 7/24/01

**Toxicity Characteristic Leaching Procedure (TCLP)**

**EPA Method 1311**

**Metals**

**Units: mg/L (ppm) in TCLP Extract**

			<b>Sample Name:</b>	<b>CS-01</b>	<b>CS-02</b>	<b>CS-03</b>
			<b>Lab Code:</b>	K2105076-001	K2105076-002	K2105076-003
			<b>Date Analyzed:</b>	7/25/01	7/25/01	7/25/01
<b>Analyte</b>	<b>EPA Method</b>	<b>MRL</b>	<b>Regulatory Limit*</b>			
Lead	3010A/6010B	0.05	5	0.17	0.30	14.2

\*

From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: \_\_\_\_\_

TCLP/102194

03076ICPEA1 - TCLP 7/31/01

Date: \_\_\_\_\_

7/31/01

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Page No.

CRAW00004285

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Schnitzer Steel Products Co.  
Project: Crawford Street  
Sample Matrix: Soil

Service Request: K2105076  
Date Collected: 7/17/01  
Date Received: 7/18/01  
Date TCLP Performed: 7/23/01  
Date Extracted: 7/24/01

Toxicity Characteristic Leaching Procedure (TCLP)

EPA Method 1311

Metals

Units: mg/L (ppm) in TCLP Extract

Sample Name: CS-04 Method Blank  
Lab Code: K2105076-004 K2105076-MB  
Date Analyzed: 7/25/01 7/25/01

Analyte	EPA Method	MRL	Regulatory Limit*		
Lead	3010A/6010B	0.05	5	0.23	ND

\* From 40 CFR Part 261, et al., and *Federal Register*, March 29, 1990 and June 29, 1990.

Approved By: \_\_\_\_\_

TCLP/102194

030761CF.EA1 - TCLP (2) 7/31/01

Date: \_\_\_\_\_

7/31/01

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Page No.:

CRAW00004286

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Schnitzer Steel Products Co.  
Project: Crawford Street  
Sample Matrix: Soil

Service Request: K2105076  
Date Collected: 7/17/01  
Date Received: 7/18/01  
Date Extracted: 7/20/01  
Date Analyzed: 7/26/01

Total Lead  
EPA Method 6010B  
Units: mg/Kg (ppm)  
Dry Weight Basis

Sample Name	Lab Code	MRL	Result
CS-01	K2105076-001	20	42
CS-02	K2105076-002	20	28
CS-03	K2105076-003	20	2150
CS-04	K2105076-004	20	26
Method Blank	K2105076-MB	20	ND

Approved By: \_\_\_\_\_

*[Signature]*

Date: \_\_\_\_\_

*7/31/01*

1AMRL/102594

05076SCP.EA1 - Sample 7/31/01

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Page No.:

CRAW00004287

CRAW00004288

Columbia Analytical Services Inc.  
Cooler Receipt And Preservation Form

Project/Client Schmitz Stud Work Order K21 05076  
Cooler received on 7/18/07 and opened on 7/18/07 by Black

1. Were custody seals on outside of cooler?  
If yes, how many and where? 1 front ☒ YES ☐ NO
2. Were seals intact and signature & date correct? ☒ YES ☐ NO
3. COC # \_\_\_\_\_  
Temperature of cooler(s) upon receipt: 5.1 \_\_\_\_\_  
Temperature Blank: 4.7 \_\_\_\_\_
4. Were custody papers properly filled out (ink, signed, etc.)? ☒ YES ☐ NO
5. Type of packing material present none
6. Did all bottles arrive in good condition (unbroken)? ☒ YES ☐ NO
7. Were all bottle labels complete (i.e. analysis, preservation, etc.)? ☒ YES ☐ NO
8. Did all bottle labels and tags agree with custody papers? ☒ YES ☐ NO
9. Were the correct types of bottles used for the tests indicated? ☒ YES ☐ NO
10. Were all of the preserved bottles received at the lab with the appropriate pH? ☒ YES ☐ NO
11. Were VOA vials checked for absence of air bubbles, and if present, noted below? ☒ YES ☐ NO
12. Did the bottles originate from CAS/K or a branch laboratory? ☒ YES ☐ NO

Explain any discrepancies \_\_\_\_\_

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

00010



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99208-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

August, 2001

Miss Rieke  
Bridgewater Group  
1500 Kruse Way Suite 110  
Lake Oswego, OR 97035

RE: Crawford St.

Enclosed are the results of analyses for samples received by the laboratory on 06/22/01 13:50. If  
you have any questions concerning this report, please feel free to contact me.

Sincerely,

Philip Nerenberg  
Laboratory Manager

Work Orders included in this report:

**P1F0696**

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

CRAW00004290



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
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503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Idgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Ricke

Reported:  
08/16/01 11:38

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-1	P1F0696-01	Soil	06/22/01 12:00	06/22/01 13:50

North Creek Analytical - Portland

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*RN*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004291



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503.906 9200 fax 503 906 9210  
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541 383.9310 fax 541 382.7588

Ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
08/16/01 11:38

**Total Metals per EPA 6000/7000 Series Methods**  
**North Creek Analytical - Portland**

Valuate	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
S-1 (P1F0696-01) Soil						Sampled: 06/22/01 Received: 06/22/01			
ad	52.3	0.500	mg/kg dry	10	EPA 6010A	07/09/01	07/10/01	1070936	M-01
S-1 (P1F0696-01RE1) Soil						Sampled: 06/22/01 Received: 06/22/01			
ad	58.9	0.167	mg/kg dry	10	EPA 6010A	07/09/01	07/12/01	1071182	A-01
S-1 (P1F0696-01RE2) Soil						Sampled: 06/22/01 Received: 06/22/01			
ad	89.0	0.167	mg/kg dry	10	EPA 6010A	07/09/01	07/12/01	1071182	A-01
S-1 (P1F0696-01RE3) Soil						Sampled: 06/22/01 Received: 06/22/01			
ad	558	1.60	mg/kg dry	95.7	EPA 6010A	07/09/01	07/12/01	1071182	A-01

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*PR*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004292



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541.383 9310 fax 541 382 7588

ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
08/16/01 11:38

**TCLP Metals per EPA 1311/6000/7000 Series Methods**  
**North Creek Analytical - Portland**

analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
S-1 (P1F0696-01) Soil					Sampled: 06/22/01 Received: 06/22/01				
cad	16.8	0.100	mg/l	20	1311/6010A	07/02/01	07/04/01	1070880	M-01

North Creek Analytical - Portland

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Philip Nerenberg, Laboratory Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

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CRAW00004293



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541.383.9310 fax 541.382.7588

Ridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
08/16/01 11:38

**Percent Dry Weight (Solids) per Standard Methods**  
**North Creek Analytical - Portland**

alyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
P-1 (P1F0696-01) Soil					Sampled: 06/22/01 Received: 06/22/01				
Solids	99.9	1.00 % by Weight	1		NCA SOP	07/03/01	07/03/01	1070835	

North Creek Analytical - Portland

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004294



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541 383 9310 fax 541 382 7588

Bridgewater Group  
4500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
08/16/01 11:38

**Total Metals per EPA 6000/7000 Series Methods - Quality Control**

**North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1070936 - EPA 3050</b>										
Blank (1070936-BLK1)										Prepared & Analyzed: 07/09/01
Lead	ND	0.500	mg/kg							M-01
CS (1070936-BS1)										Prepared & Analyzed: 07/09/01
Lead	116	0.500	mg/kg	100		116	80-120			M-01
Duplicate (1070936-DUP1)										Source: P1F0777-01 Prepared & Analyzed: 07/09/01
Lead	4.71	0.500	mg/kg dry		4.59			2.58	40	M-01
Matrix Spike (1070936-MS1)										Source: P1F0777-01 Prepared & Analyzed: 07/09/01
Lead	174	0.500	mg/kg dry	137	4.59	124	75-125			M-01
<b>Batch 1071182 - EPA 3050</b>										
Blank (1071182-BLK1)										Prepared & Analyzed: 07/12/01
Lead	ND	0.500	mg/kg							M-01
CS (1071182-BS1)										Prepared & Analyzed: 07/12/01
Lead	95.6	0.500	mg/kg	100		95.6	80-120			M-01
Duplicate (1071182-DUP1)										Source: P1F0380-01 Prepared & Analyzed: 07/12/01
Lead	1.58	0.500	mg/kg dry		1.51			4.53	40	M-01
Matrix Spike (1071182-MS1)										Source: P1F0380-01 Prepared & Analyzed: 07/12/01
Lead	144	0.500	mg/kg dry	112	1.51	127	75-125			M-01, Q-14
Matrix Spike (1071182-MS2)										Source: P1F0882-12 Prepared & Analyzed: 07/12/01
Lead	320	0.500	mg/kg dry	119	158	136	75-125			M-01, Q-14

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*PN*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004295



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541.383 9310 fax 541 382 7588

ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
08/16/01 11:38

Total Metals per EPA 600/4-90-0101 Series Methods Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071182 - EPA 3050										
Matrix Spike (1071182-MS3)										
Source: P1F0696-01RE1 Prepared & Analyzed: 07/12/01										
Lead	4440	1.59	mg/kg dry	32.7	58.9	NR	75-125			J,M-01,Q-14

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004296



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425 420 9200 fax 425 420 9210  
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541 383 9310 fax 541.382.7588

Midgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
08/16/01 11:38

Test Method per EPA 811/6000/7000 Series Methods - Quality Control

### North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 1070880 - EPA 1311/3005									
Blank (1070880-BLK1)									
Lead	ND	0.100	mg/l						M-01
Blank (1070880-BLK1)									
Lead	4.79	0.100	mg/l	5.00		95.8	75-125		M-01
Matrix Spike (1070880-MS1)									
Lead	23.8	0.500	mg/l	25.0	ND	95.2	50-150		M-01
Matrix Spike (1070880-MS2)									
Lead	23.5	0.500	mg/l	25.0	ND	94.0	50-150		M-01
Matrix Spike (1070880-MS3)									
Lead	15.4	0.735	mg/l	5.00	16.8	NR	50-150		M-01, Q-14

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004297



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425 420 9200 fax 425 420 9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509 924 9200 fax 509 924 9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503 906 9200 fax 503 906 9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541 383 9310 fax 541 382 7588

ridgewater Group  
500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
08/16/01 11:38

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 1070835 - Dry Weight									
Duplicate (1070835-DUP1)		Source: P1G0050-05		Prepared & Analyzed: 07/03/01					
% Solids	90.4	1.00 % by Weight			90.5		0.111	20	
Duplicate (1070835-DUP2)		Source: P1F0885-03		Prepared & Analyzed: 07/03/01					
% Solids	81.1	1.00 % by Weight			82.3		1.47	20	
Duplicate (1070835-DUP3)		Source: P1F0800-10		Prepared & Analyzed: 07/03/01					
Solids	73.8	1.00 % by Weight			73.3		0.680	20	

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*PN*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

8 of 9

CRAW00004298

# CHAIN OF CUSTODY REPORT

Work Order #: **DIF0696**

CLIENT: <b>Bridgewater Group</b>				INVOICE TO: <b>Bridgewater Group</b>				<b>TURNAROUND REQUEST in Business Days*</b> Organic & Inorganic Analyses <input checked="" type="checkbox"/> 10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. Petroleum Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. <input type="checkbox"/> OTHER Please Specify _____ <small>*Turnaround Requests less than standard may incur Rush Charges.</small>									
REPORT TO: <b>Ross Rieke</b>				P.O. NUMBER: <b>CRF001</b>													
ADDRESS:																	
PHONE: <b>675-5252</b> FAX: <b>675-960</b>				PROJECT NAME: <b>Crawford Street</b>				REQUESTED ANALYSES									
PROJECT NUMBER:				PROJECT NUMBER:													
SAMPLED BY: <b>Ross Rieke</b>																	
CLIENT SAMPLE IDENTIFICATION		SAMPLING DATE/TIME		Total Lead	TLP Lead							MATRIX (W, S, O)	# OF CONT.	COMMENTS	NC...VO ID		
1. <b>BS-1</b>		<b>6/22</b>		X	X							<b>S</b>	<b>1</b>				
2.																	
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	
11.																	
12.																	
13.																	
14.																	
15.																	
RELINQUISHED BY: <b>Ross Rieke</b>				DATE: <b>6/22/01</b>				RECEIVED BY: <b>Sarah Passaro</b>				DATE: <b>6/22/01</b>					
PRINT NAME: <b>Ross Rieke</b>				FIRM: <b>Bridgewater Grp</b>				PRINT NAME: <b>Sarah Passaro</b>				FIRM: <b>WCA</b>					
RELINQUISHED BY:				DATE:				RECEIVED BY:				DATE:					
PRINT NAME:				FIRM:				PRINT NAME:				FIRM:					
ADDITIONAL REMARKS:														TEMP:		PAGE OF	



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Bridgewater Group  
1500 Kruse Way Suite 110  
Lake Oswego, OR 97035

Project: Crawford St.  
Project Number: na  
Project Manager: Ross Rieke

Reported:  
08/16/01 11:38

#### Notes and Definitions

- A-01 The sample appears to be nonhomogenous, so a 3g sample size was used rather than the usual 1g. The sample contains high levels of silicates which may interfere with the extraction.
- J Estimated value.
- M-01 Analysis performed by EPA 200.8/6020 due to matrix interference or to meet lower reporting limit.
- Q-14 The Spike Recovery and/or RPD is outside of control limits due to a non-homogeneous sample matrix.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
- wet Sample results reported on a wet weight basis (as received)
- RPD Relative Percent Difference

North Creek Analytical - Portland

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Philip Nerenberg, Laboratory Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

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CRAW00004299

**APPENDIX B**

**ANALYTICAL LABORATORY REPORT FOR  
UNDERGROUND STORAGE TANK REMOVAL  
SOIL SAMPLES**

---



# COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.  
Portland, OR 97230  
Phone: (503) 254-1794

March 19, 1987  
Log #A870316-B1-2  
PO#: 2842

Columbia Forge & Machine  
8424 N. Crawford St.  
Portland, Oregon 97203

Attention: John Shore

Sample ID: #1 - Skookum, 3/13/87  
#2 - Yard, 3/13/87

Samples Received: March 13, 1987

Samples Collected by: Crosby & Overton

ANALYSIS -----	SAMPLE #1 -----	SAMPLE #2 -----
Gasoline*	< 1.0	16**
Diesel*	< 1.0	< 1.0
Lead	---	30.0

Results in mg/kg

\* Analysis by extraction capillary GC/FID.

\*\* Appears to contain some other high boiling oil and possibly some kerosene.

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

Approved by,

*Susan M. Brillante*

Susan M. Brillante,  
Laboratory Director

Sincerely,

*Susan M. Coffey*

Susan M. Coffey,  
President

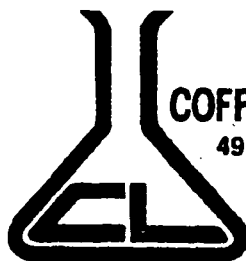
*Soil anal  
Yard*

SMC/gs

This report is for the sole and exclusive use of the above client. (no)  
Samples are retained a maximum of 15 days from the date of this letter.

B 11587

CRAW00004527



# COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.

Portland, OR 97230

Phone: (503) 254-1794

March 24, 1987

Log #A870316-B1-2

Columbia Forge & Machine  
8424 N. Crawford St.  
Portland, Oregon 97203

ATTENTION: John Shore

SUBJECT: EP TOXICITY ANALYSIS

METHOD: Federal Register, Vol. 45 No. 98, Monday, May 19, 1980,  
Rules and Regulations, Appendix II, Page 33127.

FIELD DATA: Sample ID: #2 - Yard  
Collected by: Sample collected and delivered by client.

Sample Received: March 16, 1987

ANALYSIS -----	RESULTS -----	LIMIT -----
Lead	< 0.100	5.0

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

Results are reported in milligrams per liter (mg/L)

Sincerely,

*Susan M. Coffey*

Susan M. Coffey,  
President

SMC/gs

*ordered with for 10  
2nd Soil OK  
file only E1  
done*

This report is for the sole and exclusive use of the above client.  
Samples are retained a maximum of 15 days from the date of this letter.

B 11588

CRAW00004528



**COFFEY LABORATORIES, INC.**

4914 N.E. 122nd Ave.  
Portland, OR 97230  
Phone: (503) 254-1794

March 24, 1987  
Log #A870319-K  
PO#: 2864

Columbia Forge & Machine  
8424 N. Crawford St.  
Portland, Oregon 97203

Attention: John Shore

Analysis Requested: Total Hydrocarbons

Sample ID: #3 Weld Shop

Sample Date: March 19, 1987

Sample Received: March 19, 1987

**ANALYSIS**

-----

Gasoline

Diesel

**RESULTS**

-----

< 4 mg/kg

< 4 mg/kg

Analysis by capillary GC/FID

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

Approved,

*Susan M. Brillante*

Susan M. Brillante,  
Laboratory Director

SMC/gs

Sincerely,

*Susan M. Coffey*

Susan M. Coffey,  
President

*Soil anal  
Weld #  
(no rx)*

This report is for the sole and exclusive use of the above client.  
Samples are retained a maximum of 15 days from the date of this letter.

B 11592

CRAW00004529

Appendix B



**Photo No. 24**

**Photo Date: 12/21/99**

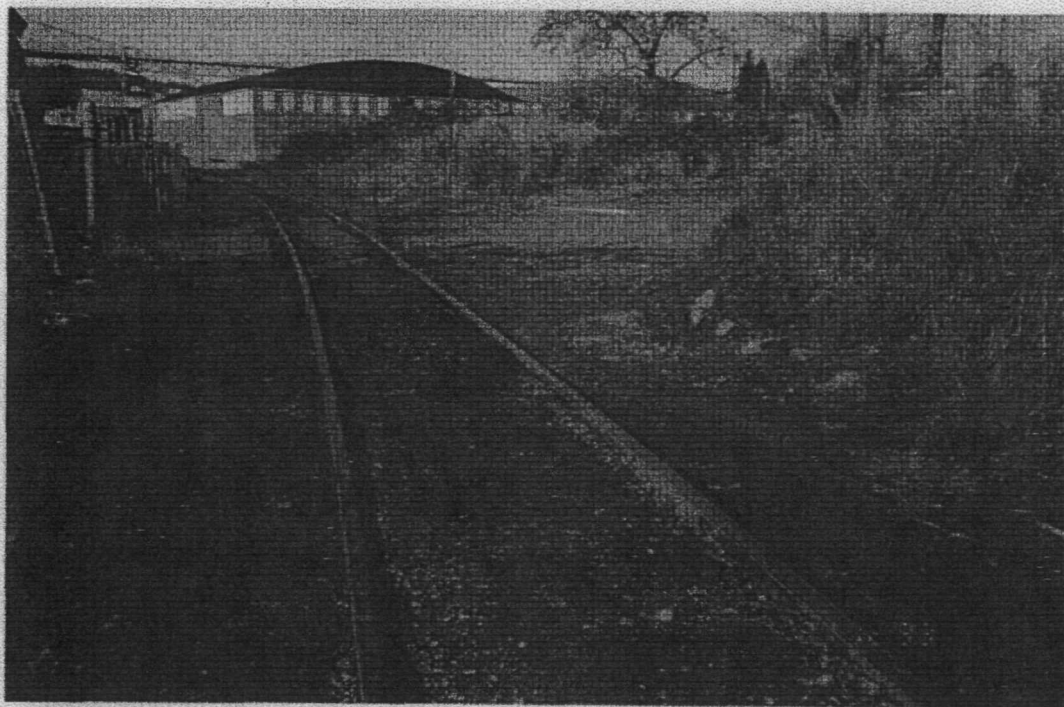
Looking south from hill above site. St. Johns Truck and Equipment debris yard north (up gradient) of Crawford Street site.



**Photo No: 25**

**Photo Date: 12/21/99**

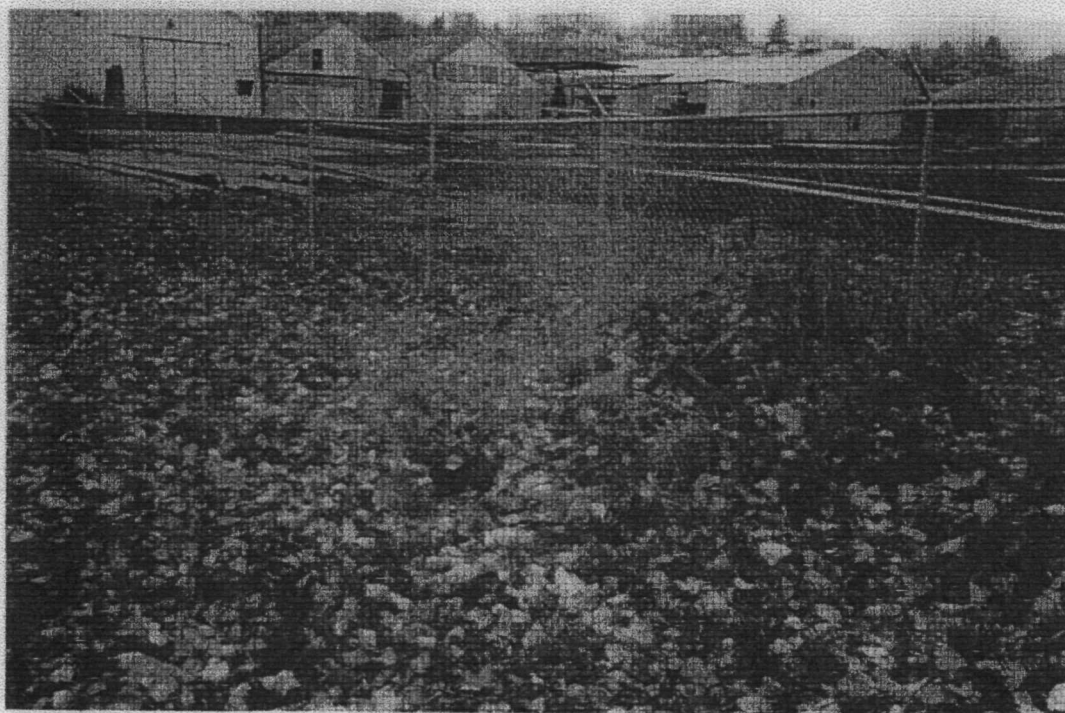
Looking north from south end of Columbia Forge/Lampros Steel yard at UPRR rail spur. St. Johns Truck and Equipment debris yard in distance. Lampros Steel beam cutting building on right.



**Photo No. 22**

**Photo Date: 12/21/99**

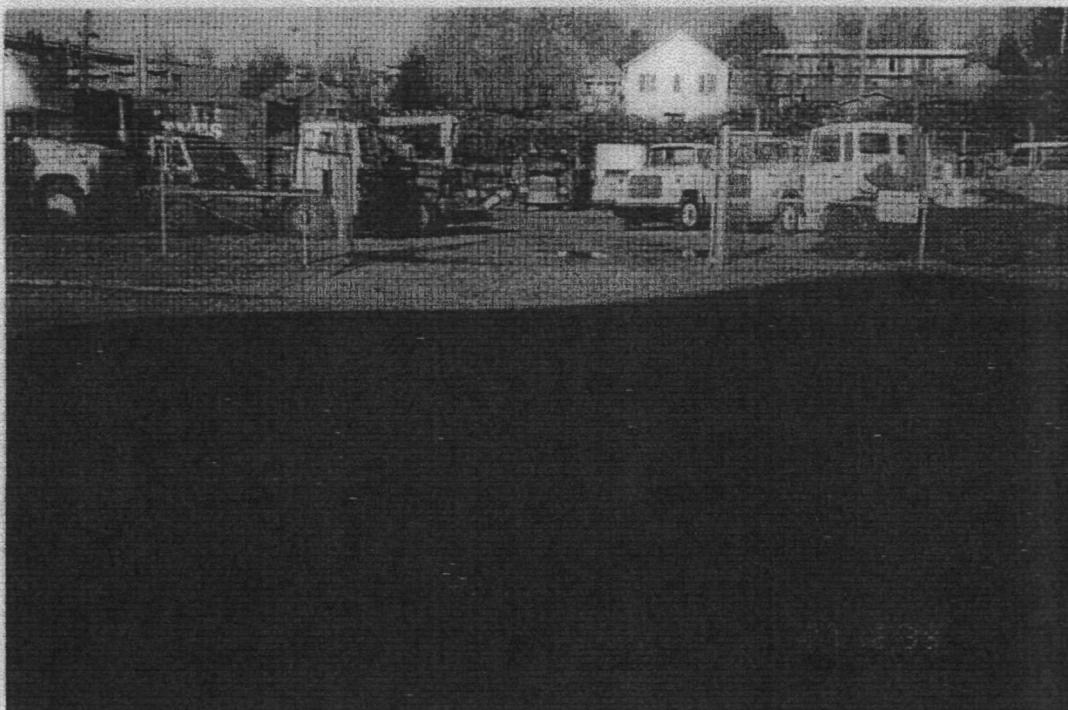
Looking west from east of site along UPRR rail spur. Note fresh oil stain in rail alignment east of Crawford Street. Stain drips continue onto the Crawford Street site.



**Photo No: 23**

**Photo Date: 12/9/99**

Looking northeast from City of Portland property west of Crawford Street site. Note asphalt and concrete debris pile on City property.



**Photo No. 20**

**Photo Date: 12/21/99**

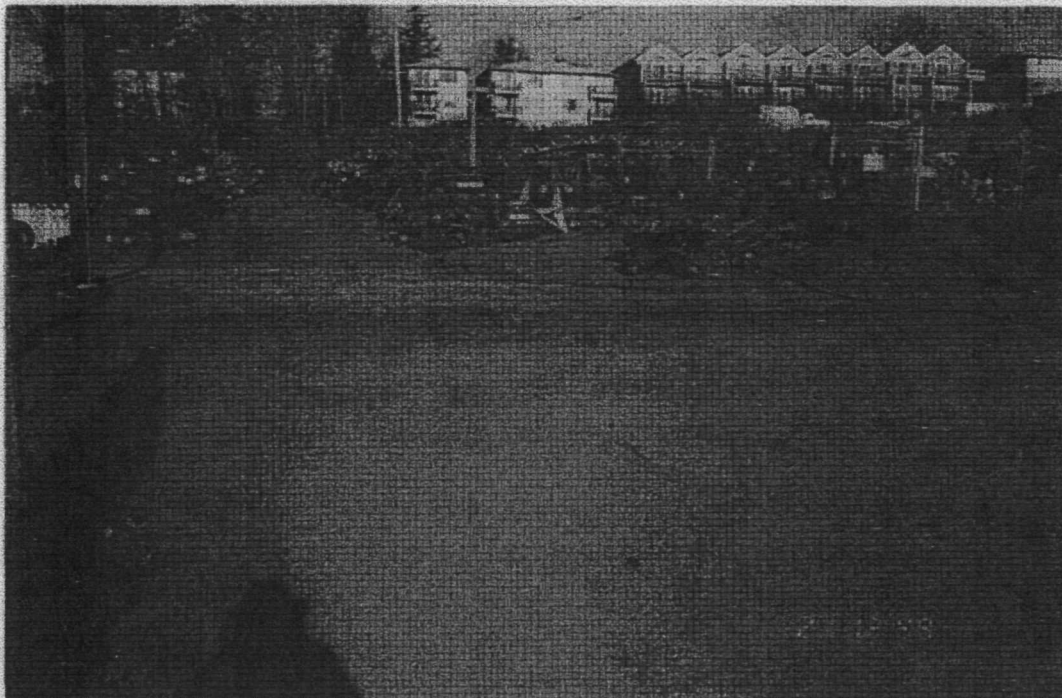
Looking north at St. Johns Truck and Equipment truck storage yard. Storm water runs from this area, across Crawford Street, and on to and across the Lampros and TLS Steel areas.



**Photo No: 21**

**Photo Date: 12/21/99**

Looking south down North Richmond Street. Storm water flows down this street to UPRR rail spur area and to the Lampros Steel south storage yard.



**Photo No. 18**

**Photo Date: 12/21/99**

Looking north from north side of Columbia Forge/Lampros Steel yard at St. Johns Truck and Equipment debris yard. Storm water runs from this area, across Crawford Street, and on to and across the storage yard.



**Photo No: 19**

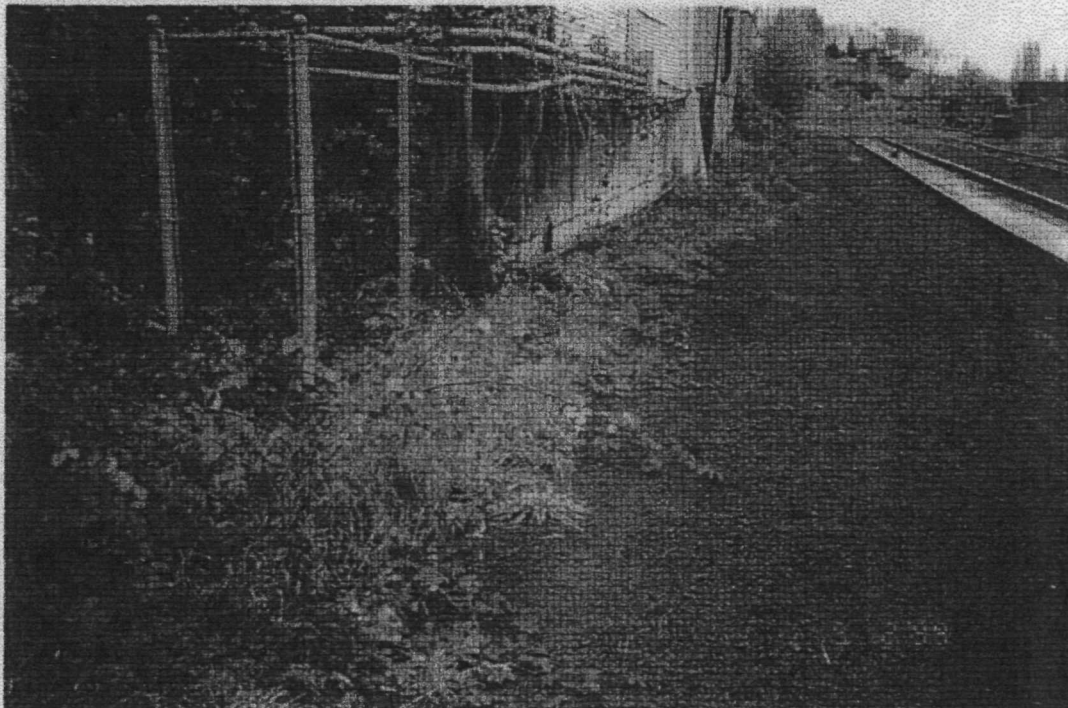
**Photo Date: 12/21/99**

Stained wash area adjacent to Crawford Street at St. Johns Truck and Equipment. Across Crawford Street from Columbia Forge.

**APPENDIX A**

**PHOTOGRAPHS OF CURRENT SITE  
CONDITIONS**

---



**Photo No. 16**

**Photo Date: 12/9/99**

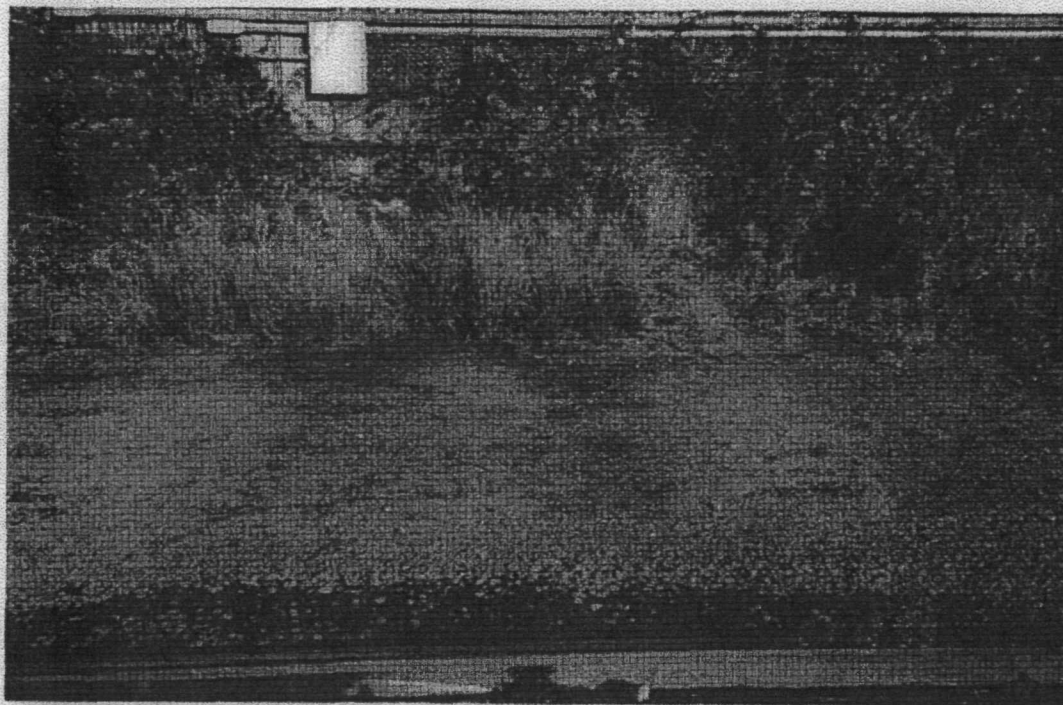
Looking east along UPRR rail spur from south side of Columbia Forge yard.



**Photo No: 17**

**Photo Date: 12/21/99**

Typical river bank conditions.

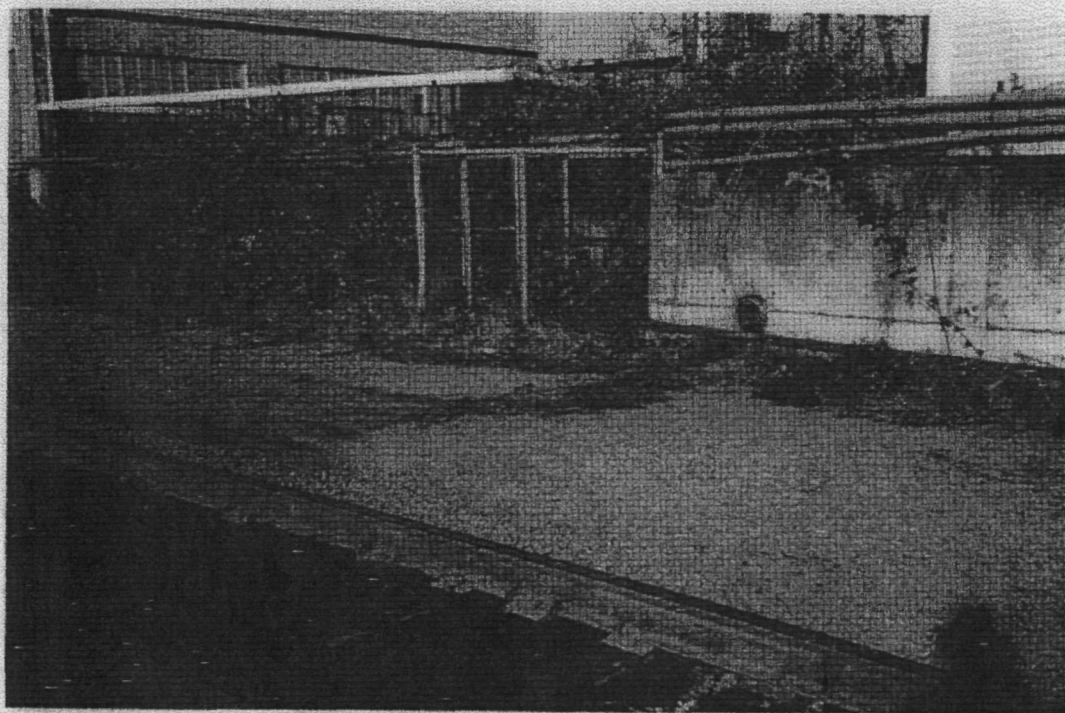


**Photo No. 14**

**Photo Date: 12/21/99**

---

Looking north at drain line outlet from west end of Columbia Forge yard.



**Photo No: 15**

**Photo Date: 12/21/99**

---

Looking north at drain line outlet from east end of Columbia Forge yard.



Photo No. 13

Photo Date: 12/9/99

Inside Lampros Steel building at west end of site.



Photo No. 11

Photo Date: 12/9/99

Inside Lampros Steel



Photo No: 12

Photo Date: 12/9/99

Inside Lampros Steel building at west end of site.



**Photo No. 9**

**Photo Date: 12/9/99**

Southwest area of Columbia Forge Building 1. Looking south.



**Photo No: 10**

**Photo Date: 12/9/99**

Machine Shop in north portion of Columbia Forge Building 1.

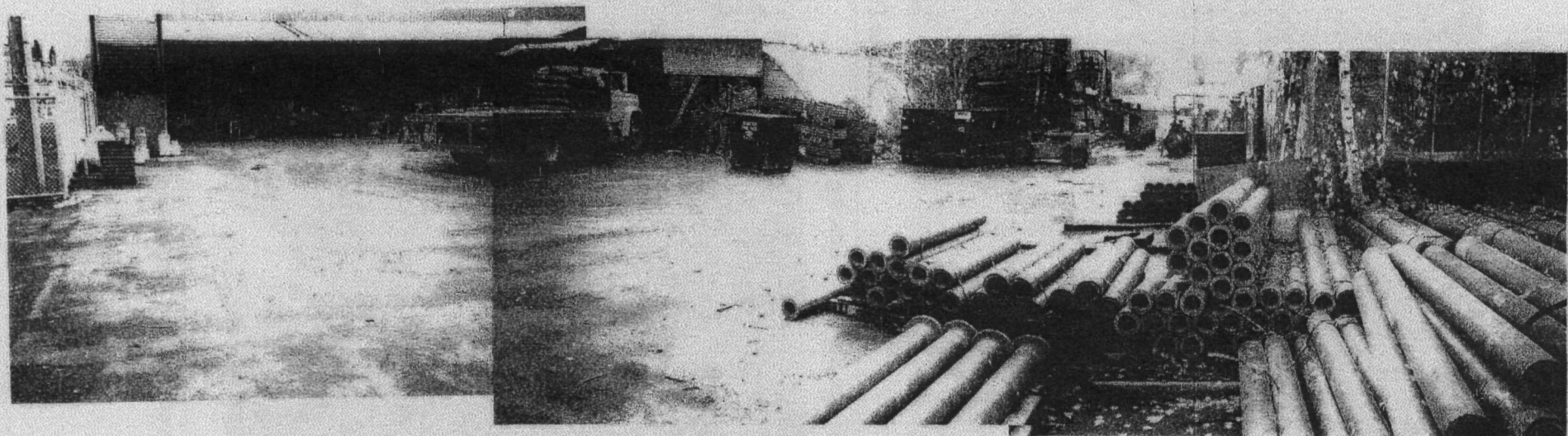


Photo No. 8

Photo Date: 12/9/99

Columbia Forge Yard. Looking southeast.



Photo No. 7

Photo Date: 12/9/99

Columbia Forge Yard. Looking northwest.

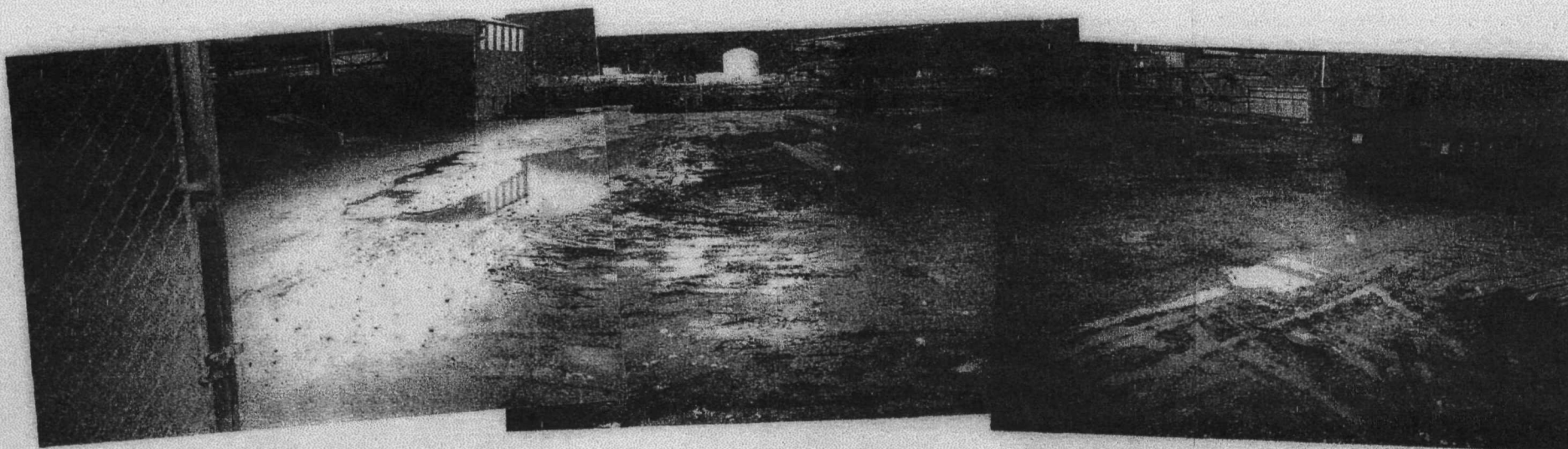


Photo No. 6

Photo Date: 12/9/99

Looking south across Columbia Forge/Lampros Steel yard.

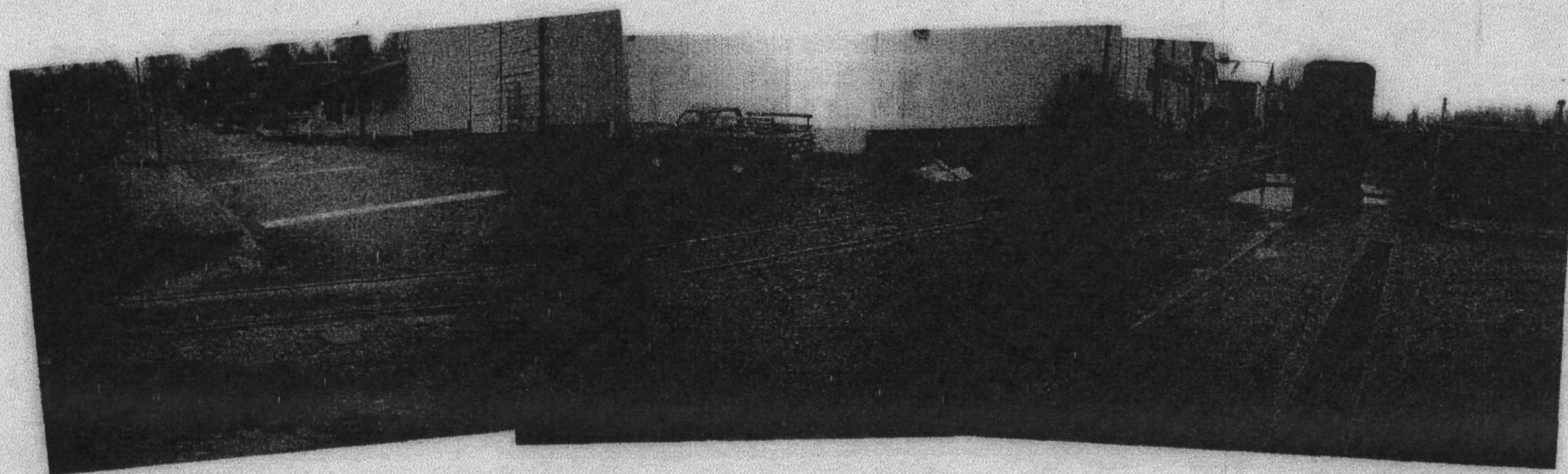


Photo No. 5

Photo Date: 12/9/99

Looking northeast from intersection of North Burlington Street and UPRR rail spur.



Photo No. 4

Photo Date: 12/9/99

Looking north across South Area (Lampros Steel storage yard) at south side of Columbia Forge and Lampros Steel.

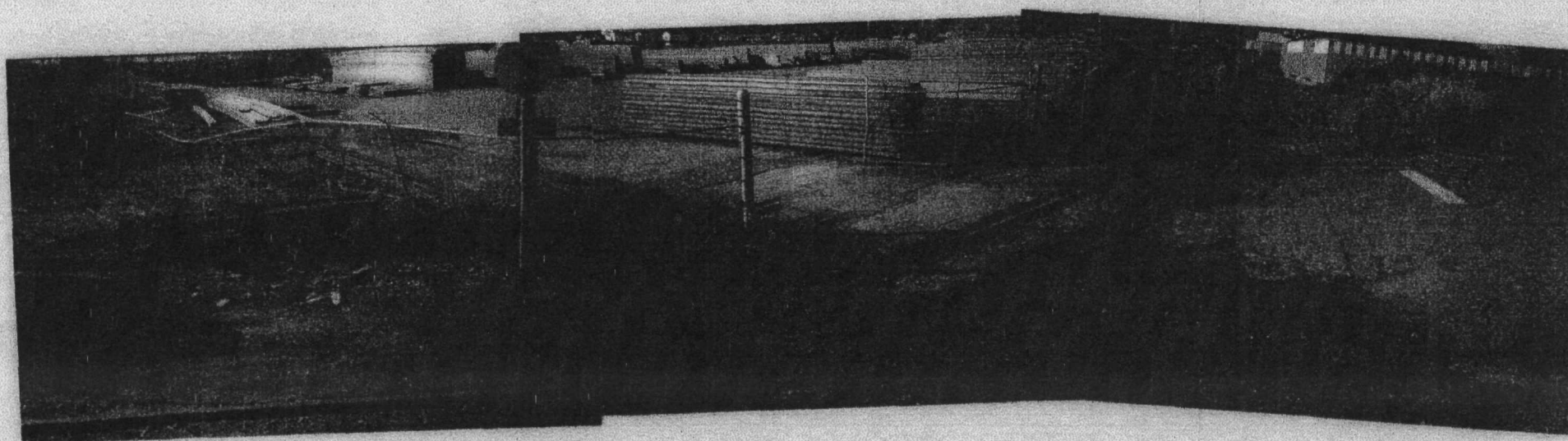


Photo No. 3

Photo Date: 4/28/99

Looking southwest into South Area (Lampros Steel storage yard) from intersection of UPRR rail spur and North Richmond Street.



Photo No. 2

Photo Date: 12/9/99

Looking southwest from intersection of North Richmond and North Crawford Streets.



Photo No. 1

Photo Date: 12/9/99

Looking southeast from intersection of North Burlington and North Crawford Streets.

APPENDIX A

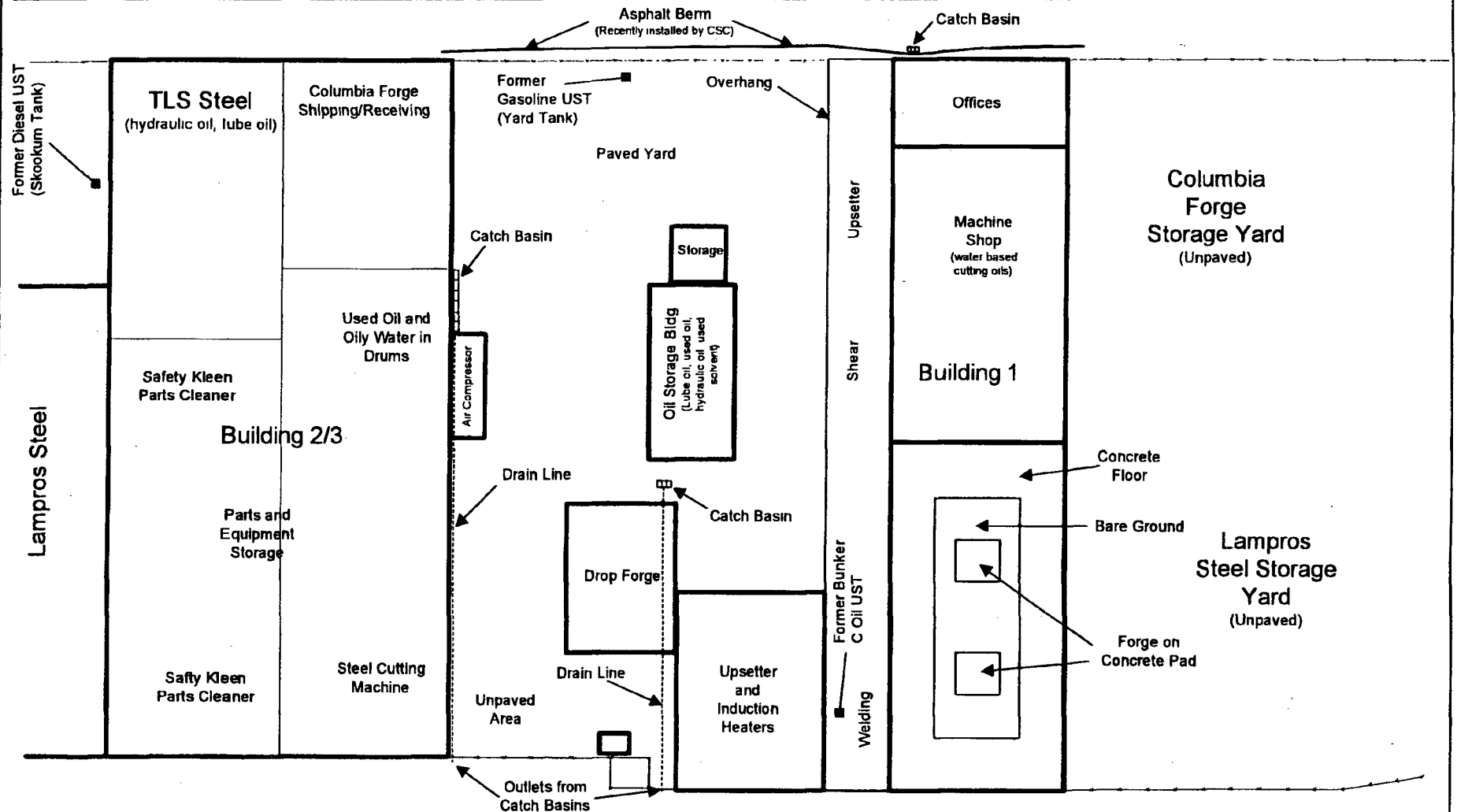
**PHOTOGRAPHS OF CURRENT SITE  
CONDITIONS**

---



UPRR Diesel Pipeline

North Crawford Street



(Project North)



Approximate Scale

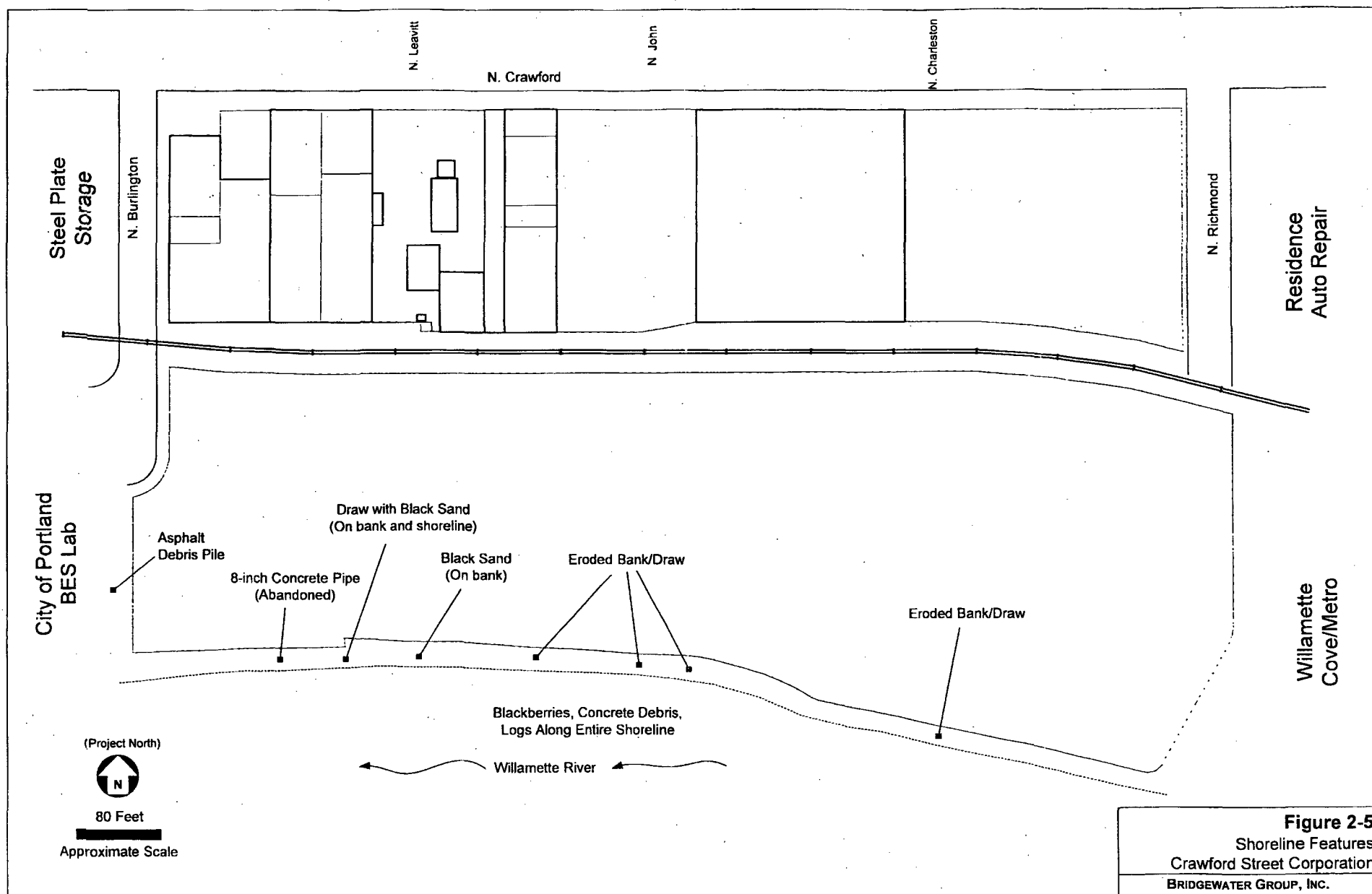
40 Feet

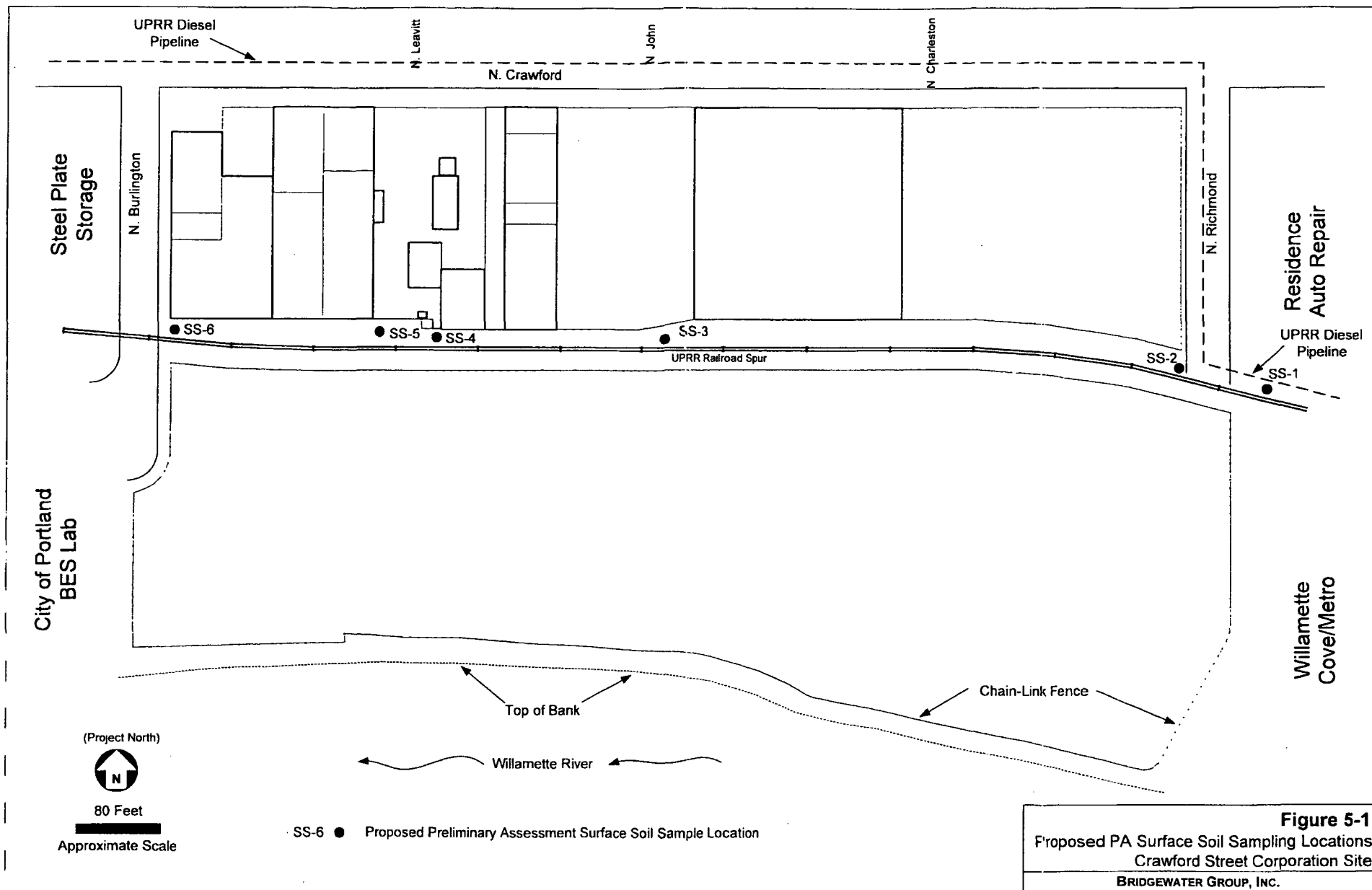
UPRR Railroad Spur

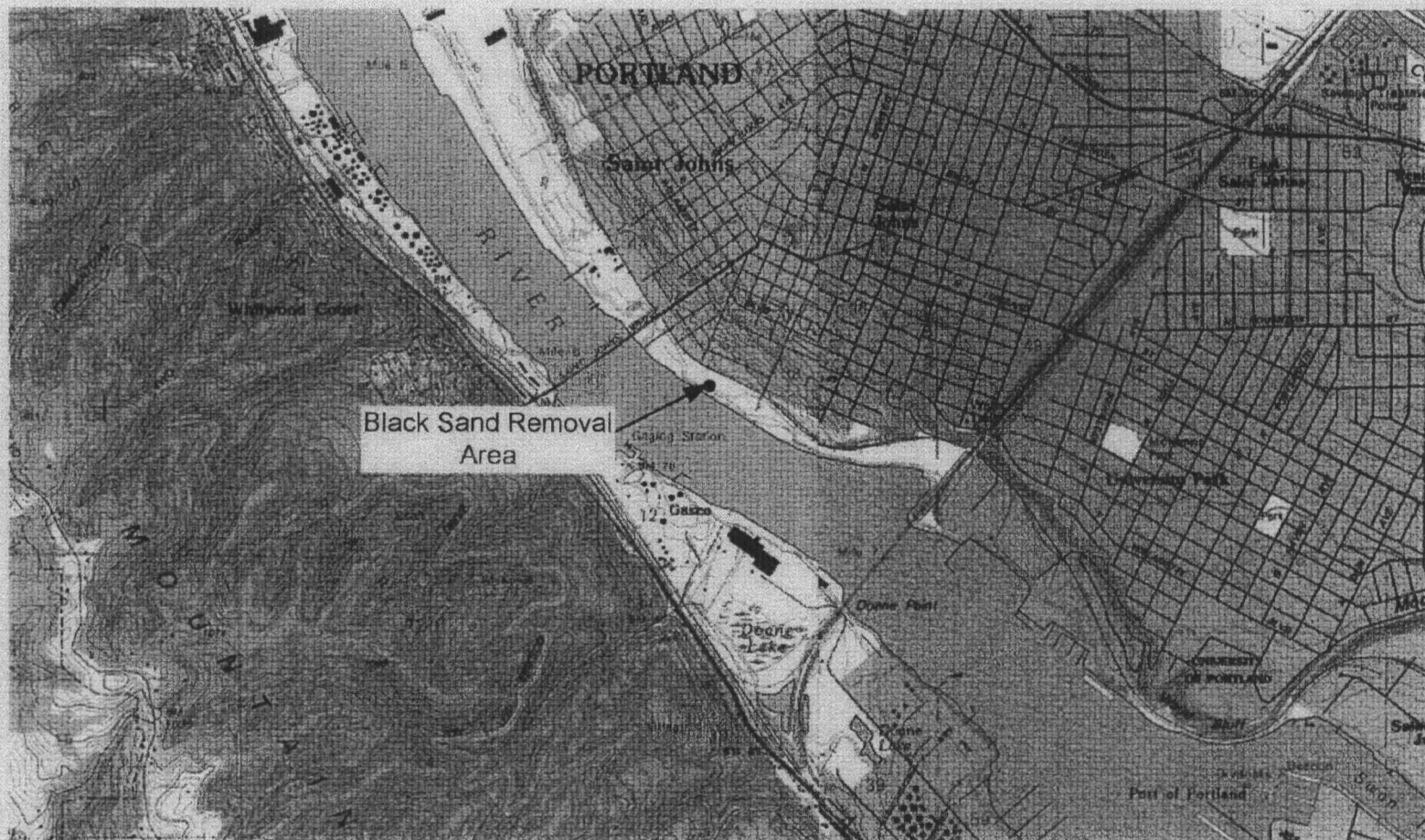
**Figure 2-4**

Columbia Forge Site Plan  
Crawford Street Corporation Site

BRIDGEWATER GROUP, INC.







Black Sand Removal Area at  
 $45^{\circ} 35' 3''$  N and  $122^{\circ} 45' 25''$  W

Approximate Scale



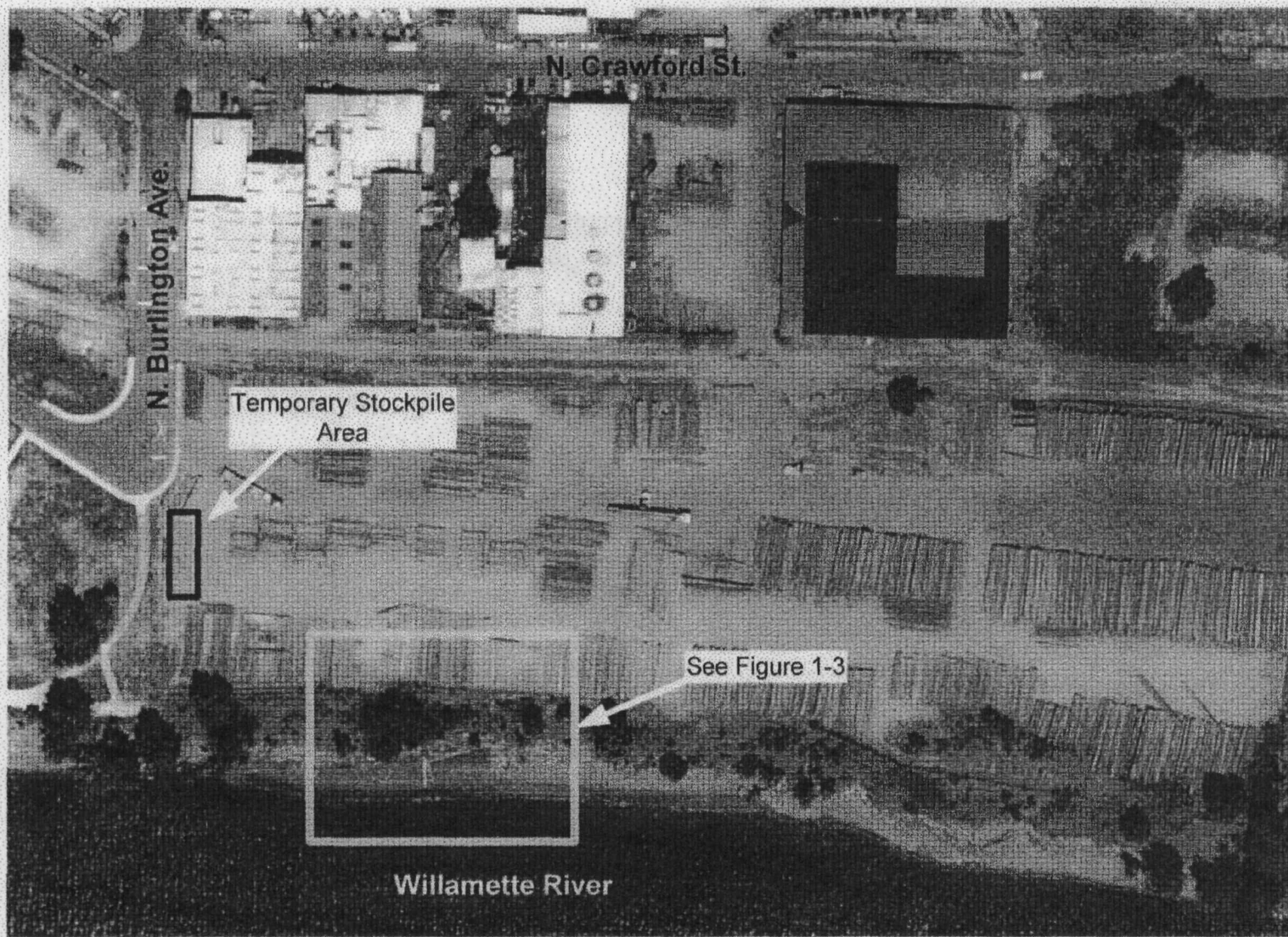
2400 feet

**Figure 1-1**

Site Location Map

Crawford Street Corporation Site

BRIDGEWATER GROUP, INC.



Approximate Scale



128 ft.

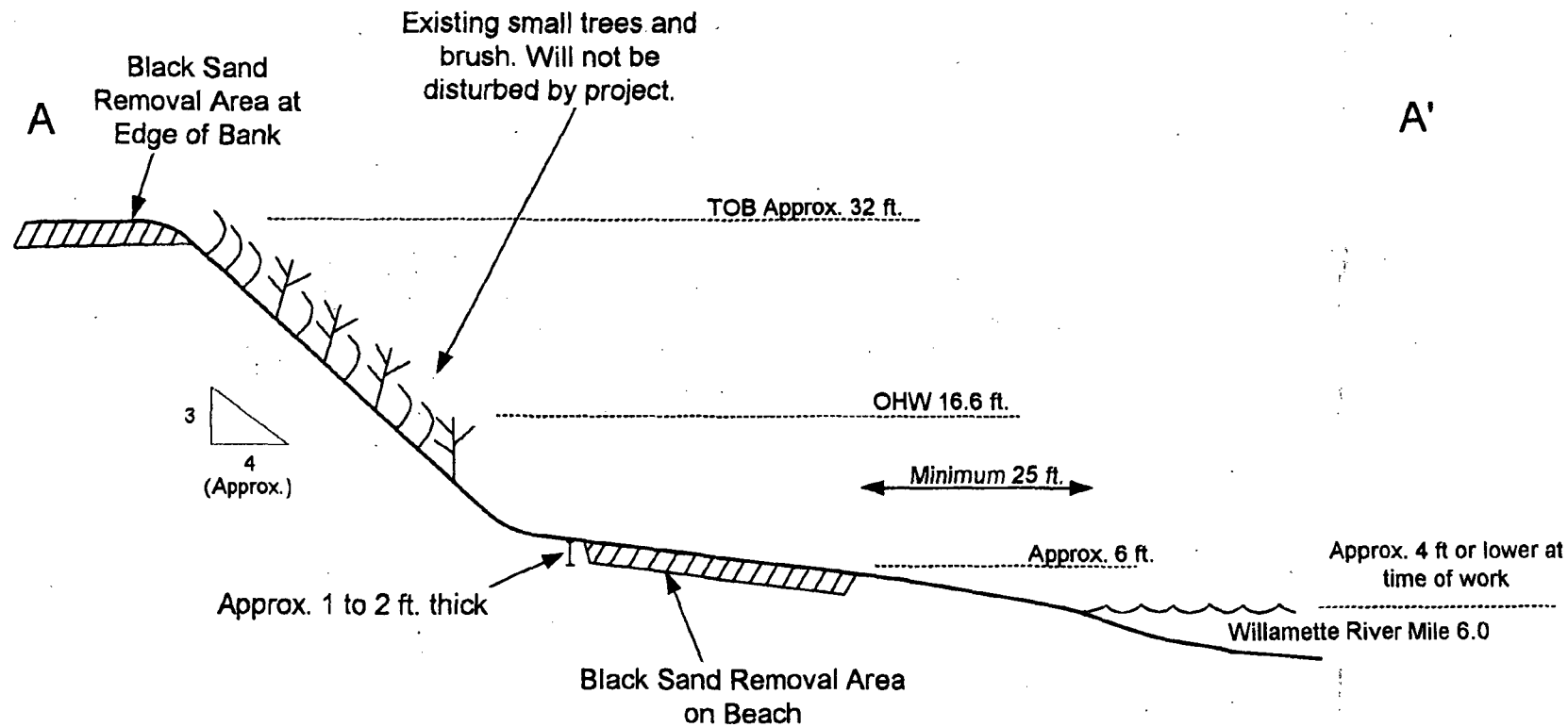
**Figure 1-2**

Site Plan

Crawford Street Corporation

BRIDGEWATER GROUP, INC.





Note: Figure Not Drawn to Scale  
Elevations Based on NGVD

**Figure 1-4**  
Cross Section A-A'  
Crawford Street Corporation

BRIDGEWATER GROUP, INC.



Figures

Figures

**Table 1-1**  
**Detected Chemical Concentrations in Black Sand**  
**Petroleum Hydrocarbons**  
**Crawford Street**  
All results in mg/kg

Sample	Location	Date	Sample Depth (ft)	Gasoline	Diesel	Heavy oil
SS-05	Black sand - shoreline	4/24/2001	0.5	4 U	25 U	50 U
SS-10	Black sand - bank	4/26/2001	2.0	4 U	78.3	180
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	4 U	25 U	194
BS-1A	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA
BS-1B	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA
BS-1C	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA
BS-1D	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA
CS-1	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA
CS-2	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA
CS-3	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA
CS-4	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA

U - Not detected at noted reporting limit  
NA - Not analyzed

Table 1-2

Detected Chemical Concentrations in Black Sand  
PAHs and PCBs

Crawford Street

All results in mg/kg

Sample	Location	Date	Sample Depth (ft)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)py	Naphthalene	Phenanthrene	Pyrene	PAHs	HPAHs	Total PAHs	PCBs
SS-05	Black sand - shoreline	4/24/2001	0.5	0.067 U	0.067 U	0.067 U	0.0683	0.0828	0.0811	0.0742	0.072	0.084	0.067 U	0.144	0.067 U	0.067 U	0.067 U	0.168	0.127	0.168	0.901	1.069	0.224
SS-10	Black sand - bank	4/26/2001	2.0	0.096	0.67 U	0.192	0.498	0.768	0.728	0.573	0.682	0.632	0.168	0.927	0.100	0.515	0.067 U	0.658	0.742	1.046	6.233	7.279	1.11
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	NA	NA	NA	NA
BS-1A	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-1B	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-1C	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BS-1D	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CS-1	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CS-2	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CS-3	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CS-4	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
McDonald Consensus TECs (sediment)					0.0572		0.108	0.15				0.166	0.033	0.423	0.077		0.176	0.204	0.195			1.61	0.06

U - Not detected at noted reporting limit

NA - Not analyzed

**Table 1-3**  
**Detected Chemical Concentrations in Black Sand**  
**Metals**  
**Crawford Street**  
All results in mg/kg

Sample	Location	Date	Sample Depth (ft)	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
SS-05	Black sand - shoreline	4/24/2001	0.5	NA	NA	NA	0.5 U	202	NA	65.3	0.1 U	NA	NA	NA	NA	NA
SS-10	Black sand - bank	4/26/2001	2.0	NA	NA	NA	0.5 U	174	NA	140	0.1 U	NA	NA	NA	NA	NA
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	0.5 U	5.65	0.5 U	0.5 U	69	170	45.6	0.167	29	0.503	0.5 U	0.5 U	178
BS-1A	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	52.3	NA	NA	NA	NA	NA	NA
BS-1B	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	58.9	NA	NA	NA	NA	NA	NA
BS-1C	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	89	NA	NA	NA	NA	NA	NA
BS-1D	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	558	NA	NA	NA	NA	NA	NA
CS-1	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	42	NA	NA	NA	NA	NA	NA
CS-2	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	28	NA	NA	NA	NA	NA	NA
CS-3	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	2150	NA	NA	NA	NA	NA	NA
CS-4	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	26	NA	NA	NA	NA	NA	NA
McDonald Consensus TECs (sediment)					9.79		0.99	43.4	31.6	35.8	0.18	22.7				121

U - Not detected at noted reporting limit

NA - Not analyzed

**Table 1-4**  
**Detected Chemical Concentrations in Black Sand**  
**TCLP Metals**  
**Crawford Street**  
All results in mg/l

Sample	Location	Date	Sample Depth (ft)	TCLP Arsenic	TCLP Cadmium	TCLP Chromium	TCLP Copper	TCLP Lead	TCLP Mercury	TCLP Nickel	TCLP Zinc
SS-05	Black sand - shoreline	4/24/2001	0.5	NA	NA	0.5 U	NA	7.39	NA	NA	NA
SS-10	Black sand - bank	4/26/2001	2.0	NA	NA	0.5	NA	1.1	NA	NA	NA
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.0002 U	NA	1.45
BS-1A	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	16.8	NA	NA	NA
BS-1B	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA
BS-1C	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA
BS-1D	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA
CS-1	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	0.17	NA	NA	NA
CS-2	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	0.3	NA	NA	NA
CS-3	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	14.2	NA	NA	NA
CS-4	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	0.23	NA	NA	NA

U - Not detected at noted reporting limit  
NA - Not analyzed

Crawford

ENVIRONMENTAL EVALUATION  
PROPOSED MANUFACTURING MANAGEMENT, INC. SITE  
(LAMPROS STEEL)  
ST. JOHNS DISTRICT, PORTLAND, OREGON



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CRAW00004343

*Runkel cap 1*

ENVIRONMENTAL EVALUATION  
PROPOSED MANUFACTURING MANAGEMENT, INC. SITE  
(LAMPROS STEEL)  
ST. JOHNS DISTRICT, PORTLAND, OREGON

April 4, 1988

Submitted To Attorneys For:

Manufacturing Management, Inc.  
4927 NW Front Avenue  
Portland, Oregon 97210

Submitted By:

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## INTRODUCTION

### PURPOSE

Attorneys for Manufacturing Management, Inc. (MMI) commissioned Sweet-Edwards/EMCON (SE/E) to conduct an environmental audit of an industrial property in the St. Johns district of Portland, Oregon, for the purposes of preparing a legal opinion and to determine if onsite soil and/or ground water contamination existed because of past onsite or nearby offsite activities. Figure 1 shows the location of the site.

### SCOPE OF WORK

Work began with an initial reconnaissance visit to the site on November 10, 1987. After that visit, a work scope and cost proposal were prepared and submitted on November 13, 1987 to N. Webb (MMI). The proposal addressed a documents search and review of historical aerial photography. The purpose of the search/review was to document activities that may have affected soil and/or ground water quality at the site. Work began on the search/review on December 10, 1987. Table 1 lists information sources used to document site-area activities and conditions. Table 2 lists the aerial photographs that were examined to partly reconstruct the site's history.

Physical features observed onsite and information developed during the search/review suggested that underground storage tanks may have been present at the site. Two other concerns were also identified. Part of the site was covered with angular, black medium to coarse sand. The sand had been placed as fill in an

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area where a building had been demolished. The chemical characteristics of the sand were unknown, as were its potential impacts on soil and ground water. Also, a former building had been served with a private septic tank and drainfield. Potential impacts to ground water beneath the drainfield were unknown.

The search/review process thus evolved into 1) exploring for underground storage tanks, 2) field sampling of soil and ground water in specific "target" areas and 3) laboratory testing of soil and ground water to determine the extent of potential contamination. This report describes the site history as developed from the search/review, and goes on to describe the methods and results of the field program.

## SITE DESCRIPTION

### TOPOGRAPHY AND DRAINAGE

The site is L-shaped (Figure 1), most of it being in a rectangular area occurring as a bench about 20 to 30 feet above the Willamette River. The rectangular area is approximately 400 by 1000 feet. The "foot" of the L-shaped area is at the eastern end of the site and lies on a gentle southwest-facing slope that rises to an elevation of 50 to 60 feet mean sea level (MSL). The "foot" is approximately 150 by 250 feet. A warehouse building is on its western end. The entire site drains to the Willamette River, the major stream in the site area. There are no surface drains or streams that drain the site directly to the river.

#### GEOLOGY/HYDROGEOLOGY

The site was mapped as being underlain by Willamette River deposits (Trimble, 1963), but exposures along the bluff overlooking the river forming the site's southern boundary suggest the bench portion of the site is immediately underlain by 20 feet of manmade fill. The river deposits and their veneer of fill are inset against older river deposits. The older river deposits extend to elevations below present sea level, where they overlie gravels of the upper part of the Troutdale Formation. The Troutdale is the most productive aquifer in the St. Johns area. However, its upper gravels occur at roughly elevation -100 feet MSL in the St. Johns area. The aquifer is probably not used near the site area because 1) no records exist at the Oregon Water Resources Department for wells near the site area and 2) the area is served by City of Portland drinking water.

#### PRESENT-DAY SITE ACTIVITIES

There are no present activities at most of the site. It has been vacated. The warehouse present in the "foot" is used by the Portland Development Commission (PDC) for storage.

#### SITE HISTORY

Review of title records supplied by N. Webb (MMI) shows that the site has been industrialized since the late 1800s. Table 3 partially lists past ownership through the 1960s-late 1970s of the blocks that comprise the site. Figure 2 shows the locations

of the blocks. The past owners listed in Table 3 are only those having business names. Individual owners are not listed. The business names permit broad inferences to be drawn concerning the nature of past onsite business activities.

Most businesses were lumber mills. Other businesses were warehousing and unknown manufacturing and possible shipbuilding work. The latter is suggested by the name "Marine Iron Works" in the title records.

U.S. Army Corps of Engineers photographs (Table 2) document site activities since 1936, the earliest year of photographic coverage. Mill buildings occupied parts of the site since at least 1936. From 1936 to the early 1950s, buildings were present in the eastern end of the main, rectangular part of the site. They were part of a plywood plant complex, most of which was offsite east of North Richmond Avenue. Building "7" (Figure 3) was one of these buildings. It was used variously for wool scouring, plywood storage, and most recently, by "Fibron Insulation" in the late 1970s-early 1980s. Other buildings were also present in the area between building "7" and the river.

A planing mill, sawmill and chip bin had been built by the early 1950s at the western end of the main site area (Buildings "4", "5", "6"; Figure 3). The present PDC warehouse had been built by 1961. By 1973, portions of the mill complex were being dismantled, beginning in the eastern half of the main area. The planing mill and sawmill at the west end of the main area were torn down during 1977-1978 by the last business to operate them, Brand S Corporation. The "Fibron" building was still standing in 1983, but was torn down by 1986, only its foundation remaining. The PDC warehouse is the only remaining onsite structure.

A site visit and interview with a former employee of the former sawmill provided additional detail concerning site history. The former employee provided critical information about two areas at the site. First, the former "Fibron" building had been served by a private septic tank and drainfield that lay between that building and the river.

The second key piece of information concerned the sand that had been placed as fill in the area where the former sawmill (Figure 3, Building "6") had stood. The former employee explained that the sand was placed during demolition of the sawmill in 1977-1978. The former sawmill got the sand from a local sandblasting company. The sand had been used to clean oil tanks on land and in ships. When the sand was placed as fill, it was oily. Winter rains flushed oil from the sand and oily water ran into the Willamette River, creating an oil slick. The Coast Guard warned the sawmill owner and no more sand was placed as fill. The oil slick eventually disappeared.

#### POTENTIAL CONTAMINANT SOURCES

##### ONSITE SOURCES

##### Sand Fill

The sandblast sand placed in the area of the former sawmill created an oil slick on the Willamette River when it was placed in the winter of 1977-78. Residual oil may still locally be present in the sand. The chemical character of the oil is unknown. The oil may be contaminated with solvents or PCBs. Oil

is regulated as a hazardous substance under the new Oregon "Superfund" law, ORS 466.540(9).

#### Suspected Underground Storage Tank Pipes

Six pipes project vertically out of the ground or out of former floor slabs at the former planing mill and sawmill sites. The pipes range in inside diameter from 6 to 8 inches. All were capped by steel plates secured to flanges with bolts. The purpose of the pipes was unknown. They may have been fill or distribution pipes for underground fuel storage tanks.

#### Possible Unknown Underground Storage Tanks

Because the site is so large and has been the scene of so many different industrial businesses for essentially 100 years, it was felt by N. Webb (MMI) and SE/E that underground storage tanks probably existed somewhere onsite.

#### Drainfield

The former "Fibron" building was served by a local septic tank and drainfield. The nature of that building's drain-piping system is unknown. It is possible that chemical spills may have been discharged to the drainfield along with "domestic" sewage.

#### OFFSITE SOURCES

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Union Pacific Railroad (UPRR) Pipeline

Figure 3 shows the location of an eight-inch pipeline operated by UPRR. The pipeline carries diesel according to Ted Haskill (UPRR). It runs down the middle of North Crawford Street and so is in the presumed upgradient direction for ground water flow with respect to the site. If the pipe has leaked, it would be an upgradient source of diesel.

Former Underground Storage Tanks, Asset Recovery and Columbia Forge

Three tanks were present at Asset Recovery and Columbia Forge along North Crawford Street. Figure 3 shows their former locations. One diesel tank was at Asset Recovery, whereas two tanks, one gasoline and one diesel, were at Columbia Forge. The tanks were removed in March 1987. Appendix 1 contains information on the tanks submitted to the Oregon Department of Environmental Quality (DEQ).

Samples were taken of 1) soil beneath the tanks and 2) the tanks' contents. The test results are in Appendix 1. The gasoline tank at Columbia Forge reportedly had a small hole in it. Soil from beneath the gasoline tanks contained 16 mg/kg gasoline, <1 mg/kg diesel and 30 mg/kg lead. The meaning of the lead sample is uncertain because another soil sample from beneath the tank was tested at <0.1 mg/kg of lead using the EP Toxicity test. The greater value of 30 mg/kg may be due to a different extraction procedure having been used. Allowing for this uncertainty, the other results still suggest that the tank had evidently leaked.

The time of the leak is uncertain because the tank had been empty since 1960 according to information filed with DEQ.

St. Johns Truck and Equipment Repair

This business at 8435 North Crawford Street is directly across from Columbia Forge and, like the UPRR diesel pipeline, is upgradient of the site with respect to ground water flow. One fuel pump is visible at the west side of the repair shop. It presumably serves an underground tank holding gasoline or diesel. No information exists at DEQ on the probable tank.

A second potential contaminant source exists at this business. It is a large metal box in which truck equipment is placed for steam cleaning. The condensate runs into a drain. Where the water drains to is unknown. The condition of the drain piping is unknown.

Oil-Contaminated Soil; Railroad Tracks and Columbia Forge

Two main buildings comprise the Columbia Forge operation. The westernmost building was formerly used by Skookum, a logging equipment manufacturer. The eastern part of that building contained a paint shop. The shop was cleaned by hosing the floor with water. The water ran into a drain that ran out to the southeastern corner of the building and onto ground just north of railroad tracks that are south of the building (Figure 3, location "D").

Oil was carried with the water, resulting in oil seeping into the ground where the drain discharged near the tracks. The affected area is at least 10 feet wide by several tens of feet long. When it rains, stormwater runoff is carried to the area by the drain and a large puddle forms. Oil moves out of the soil and forms an oil slick on the puddle.

#### Compressor Blowdown, Columbia Forge

An air compressor is located outside the east wall of the easternmost building at Columbia Forge (Figure 3, location "E"). Oil has been blown out from the compressor onto the ground surface south of the plant building.

### FIELD INVESTIGATION

#### ORGANIZATION

Seven discrete work elements, some with subelements, comprised the field investigation. They are described below in the order in which they were performed.

#### SURFACE GRAB SAMPLES OF SAND FILL

Three samples of the sand fill were taken at the ground surface on November 10, 1987. They were combined into one composite sample to test whether the sand had the characteristics of an Environmental Protection Agency (EPA) characteristic waste as

determined by the EP Toxicity test. Figure 3 shows the locations of the samples that were combined into the composite test sample.

#### RIVER BLUFF TRAVERSE

The bluff overlooking the Willamette River was traversed on December 11, 1987 to search for possible springs or seeps. No seeps or springs of ground water or chemical products were observed.

#### SUSPECTED UNDERGROUND STORAGE TANK PIPES

Four of the suspected fill/distribution pipes were sampled on December 21, 1987. All six pipes were opened, but only four contained enough water to sample. The sampling procedure is described in Appendix 2. Water in the pipes was slightly rusty. Thin, discontinuous oil films were present on the water in two pipes. The pipes were not fill pipes. They did not go straight down into tanks, but instead became horizontal about 2 feet below ground surface.

#### GEOPHYSICS SEARCH

Geophysical techniques were used to search for possible underground storage tanks in the main area of the site. No geophysical exploration was done in the "foot" area because heavy brush there prevented access. A ground-penetrating radar survey was attempted on December 26, 1987 by Williamson and Associates (Seattle, WA) under SE/E's direction. However, the attempt

failed. Reasons for the failure are discussed in Williamson and Associates' report in Appendix 4.

An electromagnetic (EM) induction survey was run on December 27, 1987 by Geo-Recon (Seattle, WA) under SE/E's direction. Geo-Recon's report is in Appendix 5. The EM survey identified several electrically conductive targets that might have been underground tanks or piping. The targets were marked on the ground with spray paint at the time of their detection. The actual presence or absence of underground tanks was confirmed later by digging.

#### TEST DRILLING AND GROUND WATER SAMPLING

##### Drainfield Area

One test boring was drilled on January 4, 1988 in the general area of the former "Fibron" building's drainfield for the purpose of determining if shallow ground water in that area had been affected by the drainfield. The boring is named T-1. Figure 3 shows T-1's location. Appendix 2 describes 1) boring and sample nomenclature and 2) drilling and sampling methods. T-1's boring log is in Appendix 1.

Total depth of T-1 was 41 feet. Ground water was found at depth 34 feet. A sample of ground water was taken within the upper few feet of the saturated zone.

### Sand-Fill Area

One test boring, T-2 (Figure 3), was drilled on January 4, 1988 in the center of the area of thickest (as judged by nearby bluff exposures) sand fill to determine if oil contamination from the sand fill had penetrated underlying materials, perhaps reaching ground water. Appendix 3 contains T-2's boring log.

Total depth of T-2 was 44.5 feet. Ground water was encountered at depth 32.4 feet. The sand fill extends to an approximate depth of 6 feet. Other fill materials are interpreted as occurring from 6 to 20 feet, below which are river deposits of sand and clayey silt. No evidence of oil, oily water or oil-stained soil was observed. Two samples of ground water were taken from the upper part of the saturated zone.

### TEST PIT EXPLORATION

#### Geophysical Targets

Seven test pits were dug on January 6, 1988 to investigate EM-identified targets. The pits were dug using a rubber-tired John Deere 410 backhoe equipped with a 36-inch smooth bucket. The backhoe and operator were from John L. Jersey Excavating (Portland, OR). All but one of the targets were pieces of scrap metal or nails in boards. The remaining target was explored by digging test pit (TP) 2 (Figure 3). A steel tank was found in TP-2 at depth 4 feet. The tank was not completely exposed at the time it was found. Digging was confined only to confirming the presence of the tank. TP-7 and all other test pits were

immediately backfilled with the material dug from them and were loosely compacted using the backhoe's bucket.

#### Sand-Fill Area

Test pits 6, 7, 8, 9, 10 and 11 were dug in the sand fill at the former sawmill. Figure 4 shows the pits' locations with respect to 1) the overall fill area and 2) the area of thickest sand fill. The pits were dug to determine 1) the thickness of the sand and 2) if any residual oil saturation of the sand existed. Table 4 describes general material types found in test pits 6-11.

All pits but TP-7 were dry. In TP-7, the upper 3 feet consisted of dry sand fill. Mixed sand fill, silt and chaotic jumbles of lumber occurred from 3 to 6 feet (Figure 5). Gray clayey silt was encountered from 6 to 6.5 feet, the final depth of TP-7.

Voids existed between pieces of lumber. While the pit was being opened between depths 3 and 6 feet, water was released from some voids and drained into the pit's bottom. The water had a thin oil slick on it, smelled strongly of oil and had a brownish white foam.

Two soil samples were collected from TP-7. Sample S-1 was of dry sand fill at depth 3 feet. Sample S-2 was of gray clayey silt at depth 6 feet. Sample S-2 was wet and oily.

Underground Storage Tank at Test Pit 2

With PDC's advance approval, MMI contracted with Crosby and Overton (C&O) (Portland, OR) to remove the underground tank discovered at TP-2. R. Paul of C&O met with R. Bunker (SE/E) at the site on January 8, 1987 to be shown where the tank was located. C&O reopened the excavation and sampled the tank's contents. C&O submitted the sample to Northwest Testing Laboratories (Portland, OR). However, SE/E took the sample from Northwest Testing on January 11, 1988 at N. Webb's (MMI) request and resubmitted it to Columbia Analytical Services (Longview, WA). The sample was of oil. It was tested for 1) PCBs, 2) benzene, 3) toluene, 4) ethyl benzene, 5) total xylene, 6) total tetrachlorophenol, 7) pentachlorophenol, 8) total organic halogens (TOX), 9) EPA Priority Pollutant metals, 10) total suspended solids, 11) percent water and 12) the EPA characteristic waste categories of corrosivity, ignitability and reactivity. The test results are in Appendix 6 (report dated January 21, 1988). The tests were done to determine if the oil was a hazardous waste. It was not; and arrangements were made by C&O to dispose of the oil at Merit Oil (Portland, OR).

The tank and its contents were removed on January 18, 1988. A representative from SE/E watched C&O perform the removal. A representative of the PDC also observed the removal. A Komatsu PC 2000 trackhoe reopened the excavation and exposed the top of the tank. The contents were pumped into a C&O vacuum truck and later transferred to 55-gallon drums for temporary storage at Columbia Forge at N. Webb's instructions to C&O. Approximately 1550 gallons of oil was removed. The tank's dimensions were 12.5 feet long and about 5.8 feet wide. Its capacity was estimated by

C&O at 2500 gallons. Figure 6 shows a cross-sectional view of the tank in the excavation dug to remove it.

After the tank had been emptied and removed from the ground, the trackhoe was used to scrape away one foot of soil that had immediately underlain the tank. The trackhoe bucket was then used to sample soil at two locations at that horizon. Figure 7 shows the sample locations. These samples were named Tank 1 and Tank 2, "Tank" indicating that the soil sample was from the tank excavation. These samples were submitted for percent oil-and-grease testing. No evidence of the tank having leaked was observed. The tank did not have any observable holes in it, nor was there any oil staining or odor in the soil beneath the tank. However, a two-inch metal pipe was found paralleling the top of the tank, running in a northeast-southwest direction. It bent southeastward at the southern end of the excavation and disappeared into the earth at depth 3 feet. Soil surrounding the pipe was discolored and black. However, there was no odor. One sample was taken of the discolored soil at the southwestern corner of the excavation. It was named the "Tank 3" sample because it was the third soil sample collected from the tank excavation. The excavation was backfilled with the soil excavated from it and with crushed rock.

## RESULTS OF FIELD INVESTIGATION

### SAND-FILL GRAB SAMPLES; EP TOXICITY TESTING

The results of the EP Toxicity testing of the grab samples of the sand fill are in Appendix 6 (report dated November 13, 1987). None of the test parameters exceeded maximum allowed levels.

### SUSPECTED UNDERGROUND STORAGE TANK PIPES

Water from three of the suspected fill/distribution pipes was tested for pH and specific conductance. The test results are in Appendix 6 (report dated December 30, 1987). Conductance ranged from 68 to 88 micromhos/cm; pH ranged from 5.5 to 5.9. These values suggested that the water in the pipes was not polluted. These results and the fact that the pipes did not go into tanks made it unlikely the pipes were in any way related to underground storage tanks. Proof of this was provided by a former employee of the sawmill, who said that the pipes were distribution lines for fire-protection systems at the former sawmill and planing mill.

### GROUND WATER SAMPLES

Ground water from borings T-1 and T-2 was tested for nitrate-nitrogen, total organic carbon (TOC) and TOX. The results are in Appendix 6 (report dated January 11, 1988). The sample from T-1 does not show any obvious impacts on water quality due to the drainfield.

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Two vertically overlapping water samples were taken immediately below the water table at T-2. The results for both samples are essentially identical, an expected result given the samples' vertical proximity. Both samples have larger TOC and TOX concentrations than at boring T-1, but neither sample shows any clear indication that shallow ground water has been affected by oil from the overlying sand fill, the bottom of which is 26 feet above the water table at the location of boring T-2.

#### TEST PIT 7 SOIL SAMPLES

Samples S-1 and S-2 were both tested for 1) weight-percent oil and grease, 2) TOX and 3) volatile organics (by EPA methods 8010 and 8020). Sample S-1 was also tested for PCBs. The results are in Appendix 6 (report dated January 19, 1988). Only sample S-1, of dry sand at depth 3 feet, shows any test constituent concentrations of note. The sample has a TOX concentration of 294 ppm and a total xylenes concentration of 310 ppb. The TOX concentration is not explained by the xylenes because xylenes do not contain halogens. This unexplained TOX value prompted an additional test on S-1 for PCBs. PCBs were measured as being <0.2 ppm. The TOX value remains unexplained.

#### UNDERGROUND STORAGE TANK AT TEST PIT 2

The results of tests on the contents of the tank were discussed in a preceding section. The contents did not fail the hazardous waste tests that were conducted and appeared to be diesel oil.

The two soil samples taken from a depth one foot below the bottom of the former tank and from discolored soil near the 2-inch pipe were tested for weight-percent oil and grease. The results are in Appendix 6.

The samples from beneath the tank, Tank 1 and Tank 2, had 0.01 and 0.02 percent oil and grease. Tank 3, the soil sample from near the 2-inch pipe, had 0.02 percent oil and grease. These low percentages indicate that there is no contamination problem due to potential past leaks from the tank.

### CONCLUSIONS

1. The sand fill did not fail the EP Toxicity test.
2. A single sample of dry sand from TP-7 shows evidence of 1) contamination with xylenes and 2) potential contamination with halogenated compounds, as indicated by a TOX value of 294 ppm. The value is not explained by PCBs because a test on the sample did not detect PCBs.
3. Samples S-1 and S-2 from TP-7 are characterized by low weight percentages of oil and grease, and are not saturated. However, enough oil is present to create localized zones of oily water. The water is rain and/or runoff that has infiltrated the sand fill and become perched atop a clayey silt layer at depth 6 feet.
4. To fully determine the extent of any potential contamination problem with the sand fill requires that 1) additional exploration be done to determine the sand's areal extent and thickness and/or the presence of any other localized zones of oily water and 2) the sand be characterized chemically by determining the extent of oil and grease and the other compound(s) responsible for the TOX value observed in sample S-1 in TP-7.
5. Shallow ground water beneath the drainfield and sand-fill area shows no obvious impacts due to the drainfield and oil in the overlying sand fill, respectively. The water quality results from the sand-fill area are supported by the lack of evidence of oil staining in unsaturated soil beneath the sand fill and above the water table.

6. A geophysical survey located one underground storage tank. Its contents were not identified as hazardous waste, but instead appeared to be diesel. The tank was removed and its contents disposed of by C&O.
7. No impacts on soil and/or ground water quality due to offsite activities were investigated by field sampling and laboratory testing as part of this study.

#### LIMITATIONS

The analysis, conclusions and recommendations contained in this report are based on site conditions as they existed at the time of these investigations. All work was carried out by or under the direction of a professional geologist. All work was completed to the normal standards of the profession and in accordance with generally accepted geological principles and practices. If, during additional investigation, data or conditions at the site differing materially from those indicated in this report are known or become available, Sweet-Edwards/EMCON should be contacted promptly to facilitate a review and investigation of those conditions in order to determine if any modifications of findings, conclusions and/or recommendations are warranted.

#### REFERENCE

Trimble, D.E., 1963, Geology of Portland, Oregon and adjacent areas: U.S. Geological Survey Bulletin 1119.

TABLE 1

INFORMATION SOURCES

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Environmental Problems

Oregon Department of Environmental Quality--Underground Storage  
Tank Program and Northwest Region Office.

Geology/Hydrogeology

Trimble (1963)--General Site Area Geology

Oregon Water Resources Division--Water Well Records (on file at  
U.S. Geological Survey, Portland)

Land Use

City of Portland--Sewer Locations

Ted Haskill, Union Pacific Railroad (UPRR)--UPRR diesel pipeline  
near site

Former Employee of former onsite sawmill

Dave Aldrich, Transamerica Title--Title records

U.S. Army Corps of Engineers, Cartography and Remote Sensing  
Section--Historical aerial photographs

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LAMP2-R.404bg

TABLE 2  
U.S. ARMY CORPS OF ENGINEERS  
AERIAL PHOTOGRAPHS REVIEWED  
FOR HISTORICAL LAND USES

YEAR	PHOTOGRAPH	SCALE
1936	38-5863	1:15,000
1939	4673	1:10,200
1940	40-5889	1:10,600
1948	589VV162PL, R391, 353 R6	Unknown
1957	57-3303	1:8,500
1961	61-1172	1:8,300
1963	63-2810	1:12,000
1967	67-955	1:12,000
1970	70-1058	1:25,000
1971	71-3292	1:3,000
1972	72-2795	1:6,000
1973	73-2192	1:24,000
1976	76-173	1:48,000
1977	77-485	1:24,000
1979	79-1636*	1:30,000
1980	80-285	1:12,000
1981	81-1536*	1:48,000
1983	83-1000*	1:24,000
1986	86-289	1:48,000

\* Color infrared photograph. All others black and white.

TABLE 3  
LIST OF PAST ONSITE PROPERTY OWNERSHIP  
BY BUSINESSES

---

Block 1

Oregon Barrel Co., Marine Iron Works, Star Sand Co., American Marine Iron Works, Western Wool Warehouse, Portland Manufacturing Co., Portland Wood Products, Portland Woolen Mills, Lawrence Warehouse Co.

Block 2

Oregon Barrel Co., Central Lumber Co., Marine Iron Works, St. Johns Lumber Co., Marine Iron Works, American Marine Iron Works, Western Wool Warehouse, Beaver-Linnton Mills, L.B. Menefee Lumber Co., Lawrence Warehouse Co., Portland Woolen Mills, Portland Spruce Mills

Block 3

Central Lumber Co., St. Johns Lumber Co., Beaver-Linnton Mills, L.B. Menefee Lumber Co., Portland Spruce Mills, Skookum (logging equipment), Portland Lumber Co., Portland Manufacturing Co., Simpson Lumber Co.

Block 4

St. Johns Lumber Co., Beaver-Linnton Mills, Portland Lumber Mills, Portland Manufacturing Co., Portland Spruce Mills

Block 7

Portland General Electric, Portland Railway, Light and Power Co., Penninsula Iron Works, Portland Lumber Mills, Brand S Corp.

Block 8

Portland Steel Shipbuilding, Portland Stove and Range Manufacturing Co., Portland Lumber Mills

River Lots

Oregon Barrel Co., Central Lumber Co., Marine Iron Works, American Marine Iron Works, St. Johns Lumber Co., Western Wool Warehouse, Beaver-Linnton Mills, L.B. Menefee Lumber Co., Portland Manufacturing Co., Portland Spruce Mills, Portland Wood Products Co.

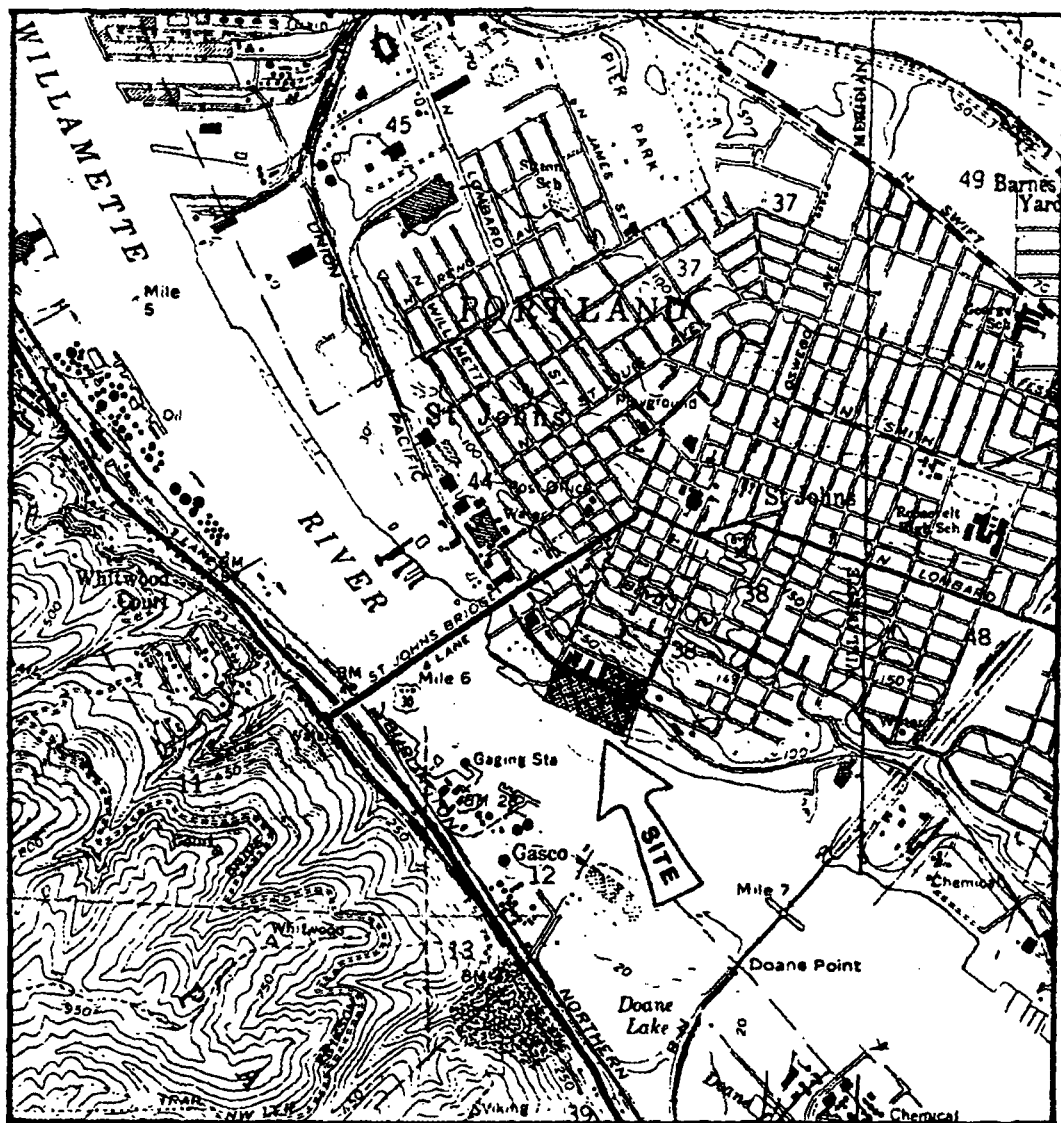
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TABLE 4  
TEST PIT DESCRIPTIONS

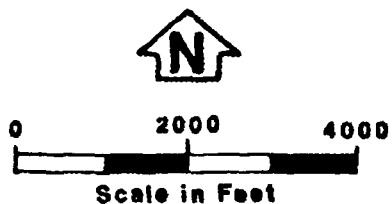
TEST PIT	DEPTH (ft.)	DESCRIPTION
6	0-4	Black sand fill.
	4	Final depth; top of concrete slab.
7	0-3	Black sand fill.
	3-6	Mixed black sand fill, silt, and timber.
	6->6.5	Gray clayey silt.
8	0-1	Black sand fill.
	1	Final depth; top of concrete slab.
9	0-5	Black sand fill.
	5-8	Brown clayey, sandy silt.
10	0-10	Brown silt, sand, metal debris, and bricks.
11	0-1	Black sand fill.
	1-2	Mixed clayey silt, sand, cobbles, and bricks.

LAMP2-T4.226

CRAW00004370

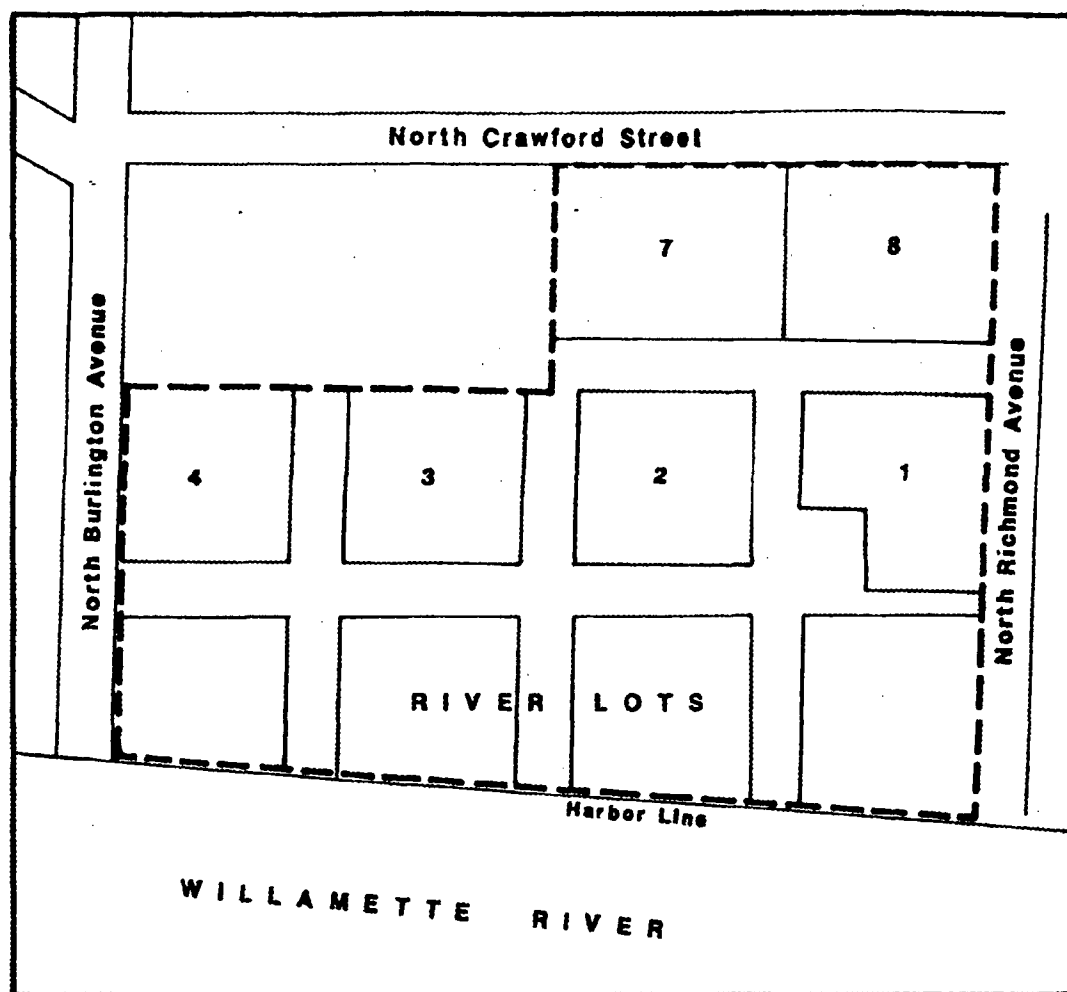


Base map U.S. Geological Survey Linton/Portland, Oregon 7.5-minute quad



MMI (Lampros Steel Site)	
Location Map	
Sweet-Edwards / EMCON, Inc.	
DRAWN BY <u>JE</u>	INITIALS DATE <u>2/1/88</u>
CHECKED BY <u>JS</u>	
REVISED	

Figure 1



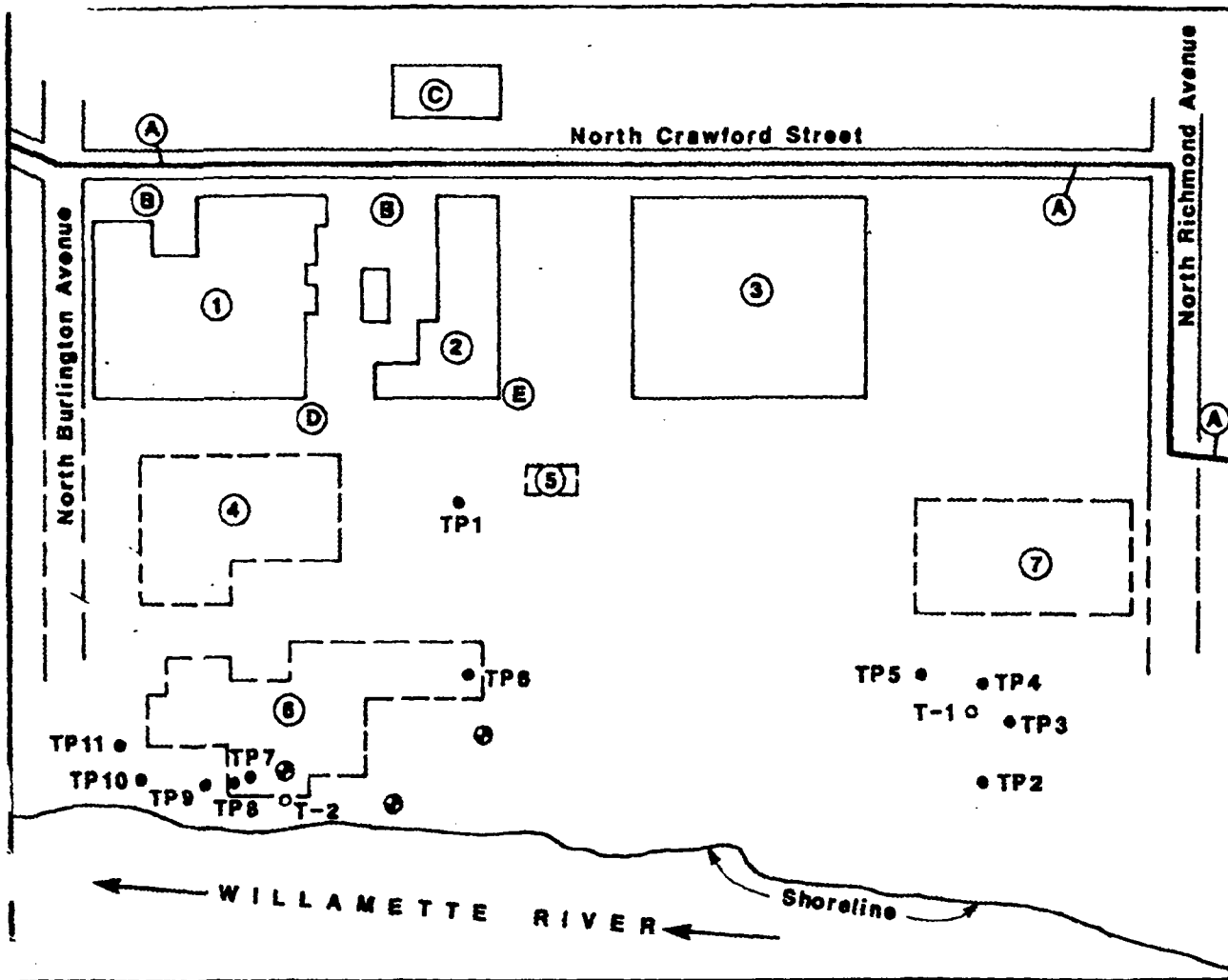
# EXPLANATION

----- Site Boundary



MMI (Lampros Steel Site)	
Block and Lot Locations	
Sweet-Edwards / EMCON, Inc.	
INITIALS	DATE
DRAWN BY <u>jt</u>	<u>2/2/88</u>
CHECKED BY _____	_____
REVISED _____	_____

Figure 2



### EXPLANATION

#### POTENTIAL OFFSITE CONTAMINANT SOURCES

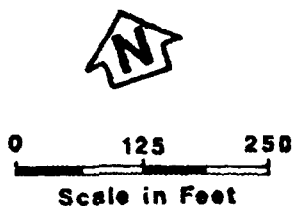
- (A) 8-inch Union Pacific Railroad diesel pipeline
- (B) Former underground storage tanks
- (C) Underground storage tank and steamcleaning area, St. Johns Truck Service
- (D) Oily soil and surface water runoff
- (E) Compressor-blowdown oil, Columbia Forge

#### CURRENT AND FORMER (F) BUSINESS BUILDING

- (1) Skookum (F), Asset Recovery, Columbia Forge
- (2) Columbia Forge
- (3) Dry Shed (F), warehouse
- (4) Planing Mill (F)
- (5) Chip Bin (F)
- (6) Sawmill (F)
- (7) Wool Scouring (F), plywood storage (F), "Fibron Insulation" (F)

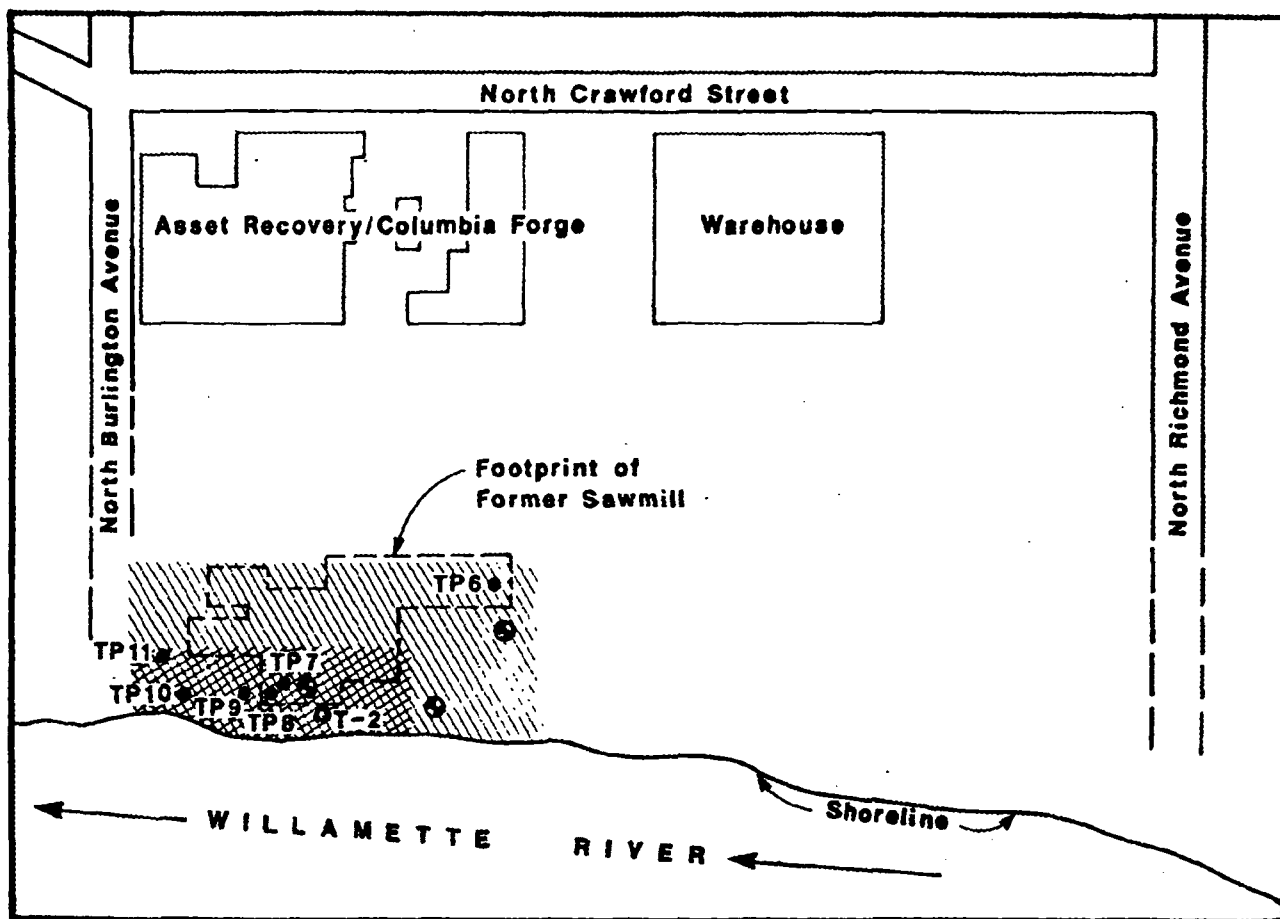
#### SAMPLE SITES

- (2) Surface grab sample of sand fill. Samples composited for EP Toxicity Testing.
- Test Pit
- Test Boring



MMI (Lampros Steel Site)	
Site Map	
Sweet-Edwards / EMCON, Inc.	
DRAWN BY <u>sh</u>	DATE <u>2/2/88</u>
CHECKED BY <u>oo</u>	
REVISED	

Figure 3



Base From: Corps of Engineers aerial photograph 77-485 (9 May 1977)

#### EXPLANATION

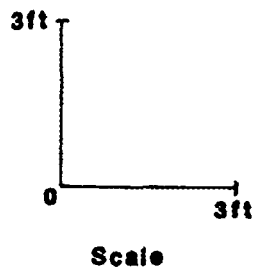
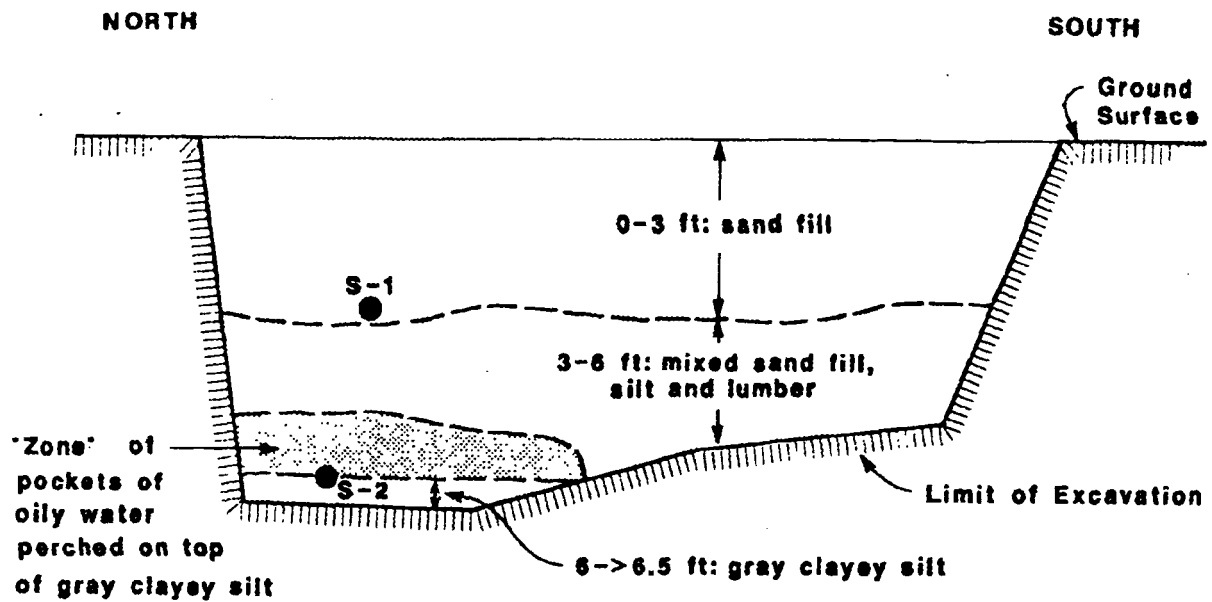
- Test Pit
- Reconnaissance Test Boring
- ⊕ Surface grab sample of sand fill.  
Samples composited into single  
sample for EP Toxicity Testing.
- Approximate Maximum Area of Sand Fill
- Approximate Area of Thickest  
(>2-3 ft) of Sand Fill

0 125 250  
Scale in Feet

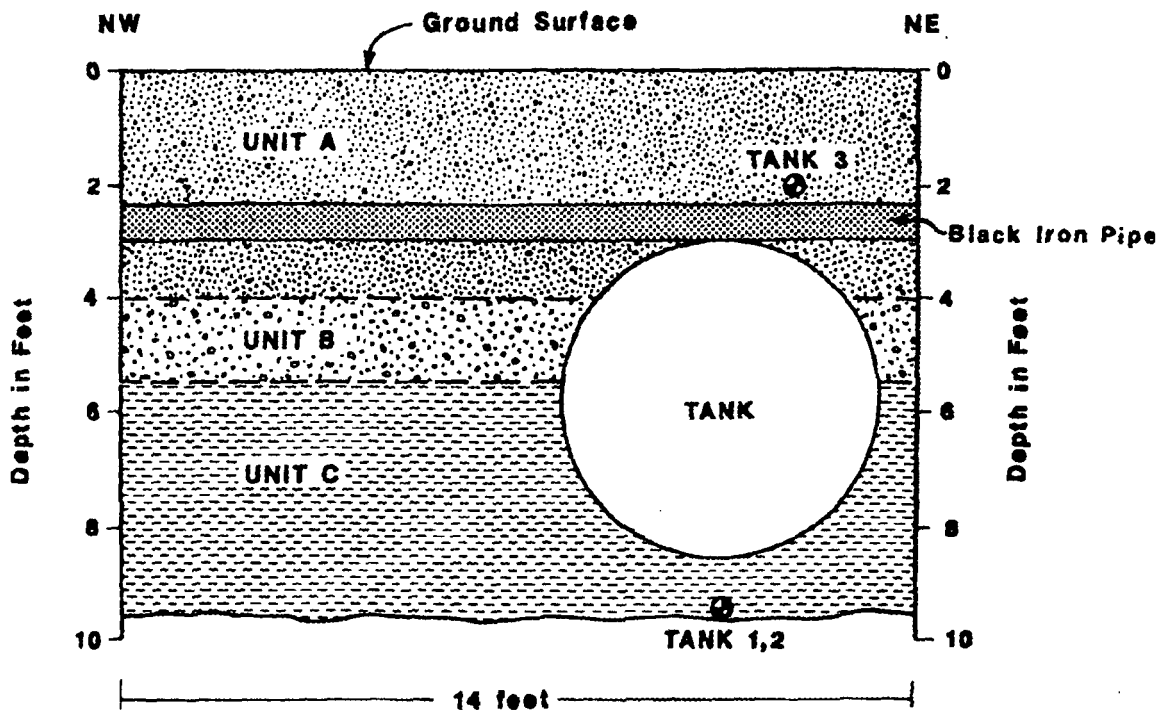


MMI (Lampros Steel Site)	
Test Pit, Reconnaissance Test Boring, Sand-Fill Area Locations	
Sweet-Edwards / EMCON, Inc.	
DRAWN BY <i>if</i>	DATE <i>2/2/84</i>
CHECKED BY <i>if</i>	
REVISED	

Figure 4



MMI (Lampros Steel Site)	
Cross Section, Test Pit 7, Sand-Fill Area	
Sweet-Edwards / EMCON, Inc.	
DRAWN BY <u>js</u>	INITIALS <u>js</u> DATE <u>2/2/58</u>
CHECKED BY <u>js</u>	
REVISED <u>          </u>	Figure 5



#### EXPLANATION

##### ⊙ Sample Location

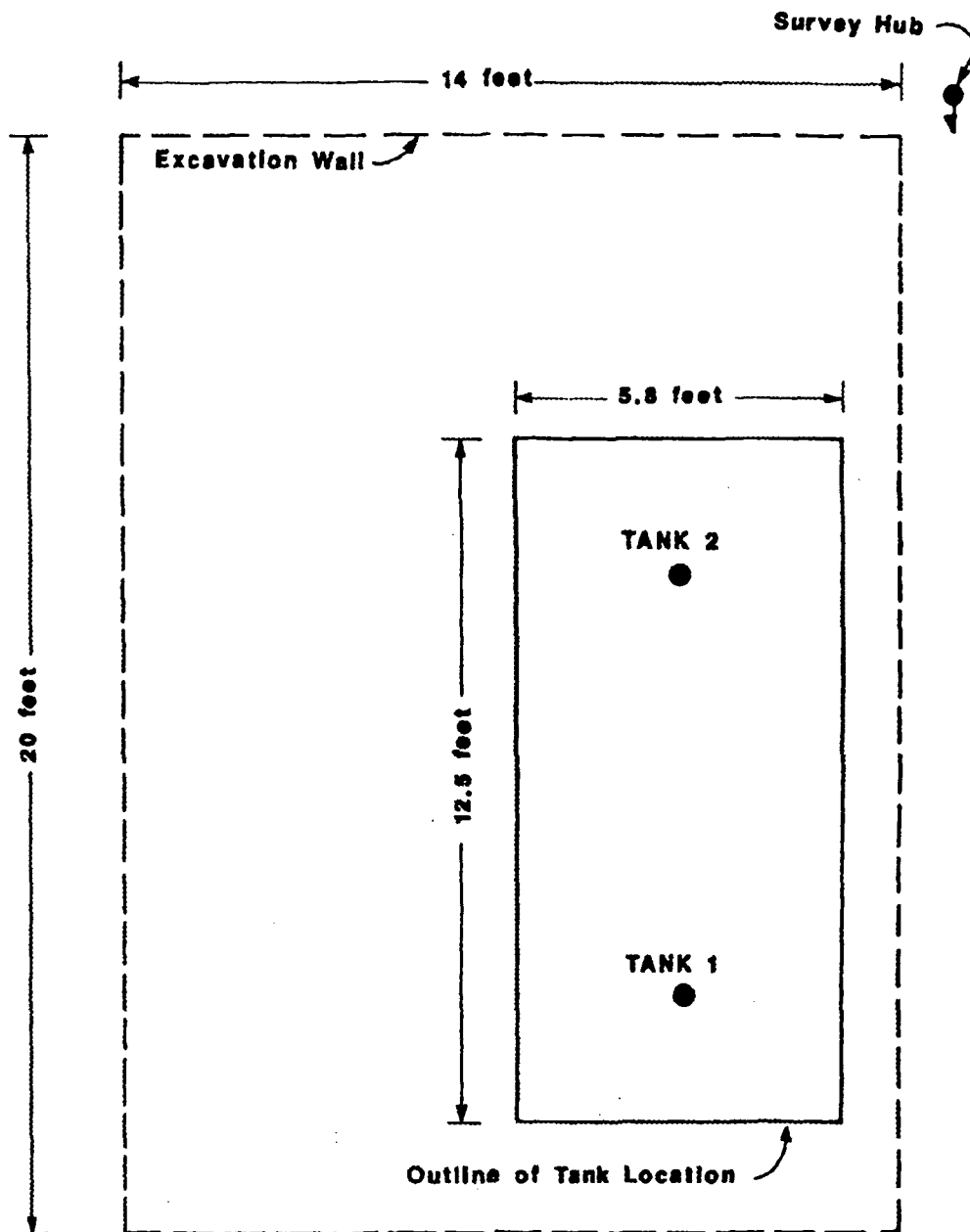
- UNIT A** 0-4.0' GRAVELLY SAND, 30% rounded GRAVELS, 80% coarse to medium SAND, brown to dark brown, organics, dry to moist.
- UNIT B** 4.0-5.5' GRAVELLY SAND, 20% pebble size GRAVEL, 80% coarse to medium SAND, brown to dark brown, damp.
- UNIT C** 5.5-9.6' CLAYEY SILT, slightly plastic, 60-70% SILT, 30-40% CLAY, light brown, dense, moist.

TANK not to scale



MMI (Lampros Steel Site)	
Tank Excavation Cross Section	
Sweet-Edwards / EMCON, Inc.	
DRAWN BY	INITIALS DATE
CHECKED BY	3/1/88
REVISED	

Figure 6



# EXPLANATION

- Soil Sample Location Below Tank



MMI (Lampros Steel Site)	
Plan View Tank Excavation	
Sweet-Edwards / EMCON, Inc.	
DRAWN BY <u>JS</u>	INITIALS <u>JS</u> DATE <u>1/25/88</u>
CHECKED BY <u>OB</u>	
REVISED	

Figure 7

## **APPENDIX 1**

### **Notification Forms and Laboratory Test Results Asset Recovery/Columbia Forge Underground Storage Tanks**

**LAMP2-TP.404bg**

**CRAW00004378**

To: Oregon Department of Environmental Quality  
Underground Storage Tank Program  
P.O. Box 1760  
Portland, Oregon 97207

STATE USE ONLY  
I.D. Number  
Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information reported is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is noted that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

While Most Notify! Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify the State or local agencies of the existence of their tanks. Owner means—

a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances; and

b) in the case of any underground storage tank in use before November 8, 1984, no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 5% or more beneath the ground. Some examples are underground tanks storing: gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. fuel or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;

3. septic tanks;

4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;

5. surface impoundments, pits, ponds, or lagoons;

6. storm water or waste water collection systems;

7. flow-through process tanks;

8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;

9. storage tanks situated in an underground area (such as a basement, cellar, subterranean drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached.

0

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)

COLUMBIA FORGE & MACH. WORKS

Street Address

8424 N. CRAWFORD

County

MULTNOMAH

City

PORTLAND

State

OR

Zip Code

97203

Area Code Phone Number

(503) 286-3621

Type of Owner (Mark all that apply)

☒ Current

☐ Former

☐ State or Local Gov't  
Federal Gov't  
(GSA facility I.D. no.)

☒ Private or  
Corporate  
☐ Ownership  
uncertain

II. LOCATION OF TANK(S)

(If same as Section I, mark box here ☒)

Facility Name or Company Site Identifier, as applicable

Street Address or State Road, as applicable

County

City (nearest)

State

Zip Code

Indicate number of tanks at this location

2

Mark box here if tank(s) are located on land within an Indian reservation or other Indian trust lands

☐

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☒)

HENRY STROMQUIST

Job Title

GENERAL MANAGER

Area Code

(503)

Phone Number

286-3621

IV. TYPE OF NOTIFICATION

☐ Mark box here only if this is an amended or subsequent notification for this location.

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative

HENRY STROMQUIST - GEN MGR

Signature

Henry Stromquist

Date Signed

1/19/87

CONTINUE ON REVERSE SIDE

**FORGE**
**VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)**

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential No. (e.g., 1, 2, 3...)	Tank No. <u>1</u>	Tank No. <u>2</u>	Tank No.	Tank No.	Tank No.
<b>1. Status of Tank</b> (Mark all that apply) <input type="checkbox"/> Currently In Use <input type="checkbox"/> Temporarily Out of Use <input checked="" type="checkbox"/> Permanently Out of Use <input type="checkbox"/> Brought into Use after 5/8/86	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>2. Estimated Age (Years)</b>	<u>19</u>	<u>35</u>			
<b>3. Estimated Total Capacity (Gallons)</b>	<u>1000</u>	<u>1000</u>			
<b>4. Material of Construction</b> (Mark one <input checked="" type="checkbox"/> ) <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Fiberglass Reinforced Plastic <input type="checkbox"/> Unknown Other, Please Specify _____	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>5. Internal Protection</b> (Mark all that apply <input checked="" type="checkbox"/> ) <input type="checkbox"/> Cathodic Protection <input checked="" type="checkbox"/> Interior Lining (e.g., epoxy resins) <input type="checkbox"/> None <input type="checkbox"/> Unknown Other, Please Specify _____	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>6. External Protection</b> (Mark all that apply <input checked="" type="checkbox"/> ) <input type="checkbox"/> Cathodic Protection <input type="checkbox"/> Painted (e.g., asphaltic) <input checked="" type="checkbox"/> Fiberglass Reinforced Plastic Coated <input type="checkbox"/> None <input type="checkbox"/> Unknown Other, Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>7. Piping</b> (Mark all that apply <input checked="" type="checkbox"/> ) <input checked="" type="checkbox"/> Bare Steel <input type="checkbox"/> Galvanized Steel <input type="checkbox"/> Fiberglass Reinforced Plastic <input type="checkbox"/> Cathodically Protected <input type="checkbox"/> Unknown Other, Please Specify _____	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>8. Substance Currently or Last Stored in Greatest Quantity by Volume</b> (Mark all that apply <input checked="" type="checkbox"/> ) a. Empty <input type="checkbox"/> b. Petroleum Diesel <input type="checkbox"/> Kerosene <input type="checkbox"/> Gasoline (including alcohol blends) <input checked="" type="checkbox"/> Used Oil <input checked="" type="checkbox"/> Other, Please Specify <u>BUNKER OIL</u> c. Hazardous Substance Please Indicate Name of Principal CERCLA Substance _____ or Chemical Abstract Service (CAS) No. _____ Mark box <input checked="" type="checkbox"/> if tank stores a mixture of substances d. Unknown <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>Additional Information (for tanks permanently taken out of service)</b> a. Estimated date last used (mo/yr) Estimate quantity of substance remaining (gal.) c. Mark box <input checked="" type="checkbox"/> if tank was filled with inert material (e.g., sand, concrete)	<u>1/1975</u> <u>100</u> <input type="checkbox"/>	<u>1/1960</u> <u>EMPTY</u> <input checked="" type="checkbox"/>	<u>1</u> <u>0</u> <input type="checkbox"/>	<u>1</u> <u>0</u> <input type="checkbox"/>	<u>1</u> <u>0</u> <input type="checkbox"/>

Form 7530-1 (11-85) Reverse

**THANK YOU FOR YOUR ASSISTANCE**

CRAW00004380

FORGEOR.

## OREGON UNDERGROUND STORAGE TANK (UST) SURVEY

The underground storage tank program will soon include performance standards for new tanks and regulations for leak detection/prevention and corrective actions which will affect owners and operators of underground storage tanks. In preparation for these new requirements, the Department has prepared a state-wide survey. The Department requests that owners of underground storage tanks complete the survey questions.

Your response to these questions will assist the Department in developing a cost-effective and responsive state-wide regulatory program. In addition, owners of underground storage tanks may find the survey useful in the management of such tanks.

## INSTRUCTIONS

Please type or print in ink all items. Please complete one survey form for each location containing underground storage tanks. Tank I.D. should correspond to Tank I.D. on EPA form 7530-1 for the respective facility location. If more than five tanks are owned at this location, photocopy this survey or request additional forms from DEQ, and staple continuation sheets to this survey.

Tank Identification No.	Tank No. 1	Tank No. 2	Tank No.	Tank No.	Tank No.
1. Status of Tank (Check One) If temporarily out of use, Estimated time out of use: 1 month - 6 months 6 months - 1 year 1 year - 5 years 5 years or more Estimated date to be brought back into use (mo/yr)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2. Was tank new at time of installation? (Y/N)	UNKNOWN	UNKNOWN			
3. Containment Systems (check one) Single-walled tank Double-walled tank Pit-lining system Unknown	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. Leak Detection System (check all that apply) Visual Stock Inventory Tile drain Vapor wells Sensor instrument (specify type): In-ground detector Within walls of double-walled tank Ground water monitoring wells Continuous in piping Pressure test Internal inspection Other, specify None Unknown	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. Overfill Protection (Yes/No)	NO	NO			
6. Location of Piping (check all that apply) No parts in contact with soil Parts contacting the soil which are: Unprotected metal Made of corrosion resistant materials Corrosion-resisted coated Cathodically protected Double-walled Within a secondary containment Interior lined Unknown	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
7. History of Tank Repairs (check one except as indicated) If tank repaired, indicate date of last repairs (mo/yr) None Unknown	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
8. History of Pipe Repairs (check one except as indicated) If pipe repaired, indicate date (mo/yr) None Unknown	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

THANK YOU FOR YOUR ASSISTANCE

# NOTIFICATION FOR UNDERGROUND STORAGE TANKS

APPROVAL 10/19/83 6-10-83

State of Oregon Department of Environmental Quality  
Underground Storage Tank Program  
P.O. Box 1760  
Portland, Oregon 97207

STATE USE ONLY

I.D. Number

Date Received

## GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information reported is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

While RCRA Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means— (a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances, and (b) in the case of any underground storage tank in use before November 8, 1984, the person in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 1% or more beneath the ground. Some examples are underground tanks storing: gasoline, used oil, or diesel fuel, and 2. Industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;

### 3. septic tanks;

4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an interstate pipeline facility regulated under State laws;

5. surface impoundments, pits, ponds, or lagoons;

6. storm water or waste water collection systems;

7. flow-through process tanks;

8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;

9. storage tanks situated in an underground area (such as a basement, cellar, mine-working drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

What Substances are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 301 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or for which false information is submitted.

## INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached.

0

### I. OWNERSHIP OF TANK(S)

Owner Name (If corporation, individual, Public Agency, or Other Entity)

CRAWFORD STREET CORP.

Street Address

4937 NW FRONT AVE

County

MULTNOMAH

City

PORTLAND

State

OR

Zip Code

97210

Telephone Number

(503) 227-4313

Type of Owner (Mark all that apply [X])

☒ Current

☐ Former

☐ State or Local Govt.

☐ Federal Govt.

☐ GSA (facility I.D. no.)

☒ Private or Corporate

☐ Ownership uncertain

### II. LOCATION OF TANK(S)

(If same as Section I, mark box here ☒)

Facility Name or Company Site Identifier, as applicable

CRAWFORD STREET CORP.

Street Address or State Road, as applicable

8524 N. CRAWFORD

County

MULTNOMAH

City (nearest)

PORTLAND

State

OR

Zip Code

97203

Indicate number of tanks at this location

1

Mark box here if tank(s) are located on land within an Indian reservation or other Indian trust lands

☐

### III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☒)

HENRY STROMQUIST

Job Title

GENERAL MANAGER

Area Code

(503)

Phone Number

286-3621

### IV. TYPE OF NOTIFICATION

☐ Mark box here only if this is an amended or subsequent notification for this location.

### V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative

HENRY STROMQUIST - GEN. MGR.

Signature

[Signature]

Date Signed

1/19/87

CONTINUE ON REVERSE SIDE

Form 7530-1 (11-85)

Please complete the voluntary UST Survey on Page 4.

CRAW00004382

## VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential No. (e.g., 1, 2, 3...)	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
<b>1. Status of Tank</b> (Mark all that apply) <input type="checkbox"/> Currently In Use <input type="checkbox"/> Temporarily Out of Use <input checked="" type="checkbox"/> Permanently Out of Use <input type="checkbox"/> Brought into Use after 5/8/86	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<b>2. Estimated Age (Years)</b>	50				
<b>3. Estimated Total Capacity (Gallons)</b>	5000				
<b>4. Material of Construction</b> (Mark one <input type="checkbox"/> ) <input type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Fiberglass Reinforced Plastic <input type="checkbox"/> Unknown Other, Please Specify _____	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____
<b>5. Internal Protection</b> (Mark all that apply <input type="checkbox"/> ) <input type="checkbox"/> Cathodic Protection <input type="checkbox"/> Interior Lining (e.g., epoxy resins) <input checked="" type="checkbox"/> None <input type="checkbox"/> Unknown Other, Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____
<b>6. External Protection</b> (Mark off that apply <input type="checkbox"/> ) <input type="checkbox"/> Cathodic Protection <input type="checkbox"/> Painted (e.g., asphaltic) <input type="checkbox"/> Fiberglass Reinforced Plastic Coated <input checked="" type="checkbox"/> None <input type="checkbox"/> Unknown Other, Please Specify _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____
<b>7. Piping</b> (Mark all that apply <input type="checkbox"/> ) <input checked="" type="checkbox"/> Bare Steel <input type="checkbox"/> Galvanized Steel <input type="checkbox"/> Fiberglass Reinforced Plastic <input type="checkbox"/> Cathodically Protected <input type="checkbox"/> Unknown Other, Please Specify _____	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____
<b>8. Substance Currently or Last Stored in Greatest Quantity by Volume</b> (Mark all that apply <input type="checkbox"/> ) a. Empty <input checked="" type="checkbox"/> b. Petroleum <input type="checkbox"/> <input checked="" type="checkbox"/> Diesel <input type="checkbox"/> Kerosene <input type="checkbox"/> Gasoline (including alcohol blends) <input type="checkbox"/> Used Oil Other, Please Specify _____ c. Hazardous Substance Please Indicate Name of Principal CERCLA Substance or Chemical Abstract Service (CAS) No. Mark box <input type="checkbox"/> if tank stores a mixture of substances d. Unknown <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/>
<b>Additional Information (for tanks permanently taken out of service)</b> a. Estimated date last used (mo/yr) Estimate quantity of substance remaining (gal.) c. Mark box <input type="checkbox"/> if tank was filled with inert material (e.g., sand, concrete)	6/1985 EMPTY <input type="checkbox"/>	_____ _____ <input type="checkbox"/>	_____ _____ <input type="checkbox"/>	_____ _____ <input type="checkbox"/>	_____ _____ <input type="checkbox"/>

**OREGON UNDERGROUND STORAGE TANK (UST) SURVEY**

The underground storage tank program will soon include performance standards for new tanks and regulations for leak detection/prevention and corrective actions which will affect owners and operators of underground storage tanks. In preparation for these new requirements, the Department has prepared a state-wide survey. The Department requests that owners of underground storage tanks complete the survey questions.

Your response to these questions will assist the Department in developing a cost-effective and responsive state-wide regulatory program. In addition, owners of underground storage tanks may find the survey useful in the management of such tanks.

**INSTRUCTIONS**

Please type or print in ink all items. Please complete one survey form for each location containing underground storage tanks. Tank I.D. should correspond to Tank I.D. on EPA form 7530-1 for the respective facility location. If more than five tanks are owned at this location, photocopy this survey or request additional forms from DEQ, and staple continuation sheets to this survey.

Tank Identification No.	Tank No.	Tank No.	Tank No.	Tank No.	Tank No.
<b>1. Status of Tank</b> (Check One) If temporarily out of use, Estimated time out of use: 1 month - 6 months <input type="checkbox"/> 6 months - 1 year <input type="checkbox"/> 1 year - 5 years <input type="checkbox"/> 5 years or more <input checked="" type="checkbox"/> Estimated date to be brought back into use (mo/yr) <u>1/1</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>2. Was tank new at time of installation? (Y/N)</b>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
<b>3. Containment Systems</b> Single-walled tank (check one) Double-walled tank <input checked="" type="checkbox"/> Pit-lining system <input type="checkbox"/> Unknown <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>4. Leak Detection System</b> Visual (check all that apply) Stock inventory <input type="checkbox"/> Tile drain <input type="checkbox"/> Vapor wells <input type="checkbox"/> Sensor instrument (specify type): In-ground detector <input type="checkbox"/> Within walls of double-walled tank <input type="checkbox"/> Ground water monitoring wells <input type="checkbox"/> Continuous in piping <input type="checkbox"/> Pressure test <input type="checkbox"/> Internal inspection <input type="checkbox"/> Other, specify <input type="checkbox"/> None <input checked="" type="checkbox"/> Unknown <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>5. Overfill Protection (Yes/No)</b>	<u>UNKNOWN</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
<b>6. Location of Piping</b> (check all that apply) No parts in contact with soil Parts contacting the soil which are: Unprotected metal <input checked="" type="checkbox"/> Made of corrosion resistant materials <input type="checkbox"/> Corrosion-resisted coated <input type="checkbox"/> Cathodically protected <input type="checkbox"/> Double-walled <input type="checkbox"/> Within a secondary containment <input type="checkbox"/> Interior lined <input type="checkbox"/> Unknown <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>7. History of Tank Repairs</b> (check one except as indicated) If tank repaired, indicate date of last repairs (mo/yr) <u>1</u> None <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>8. History of Pipe Repairs</b> (check one except as indicated) If pipe repaired, indicate date (mo/yr) <u>1</u> None <input type="checkbox"/> Unknown <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THANK YOU FOR YOUR ASSISTANCE



# COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.  
Portland, OR 97230  
Phone: (503) 254-1794

March 13, 1987  
Log #A870305-1  
PO#: 2789

Columbia Forge & Machine  
8434 N. Crawford St.  
Portland, Oregon 97203

ATTENTION: John Shore

SUBJECT: EP TOXICITY ANALYSIS

SOIL BENEATH DIESEL TANK,  
COLUMBIA FORGE

METHOD: Federal Register, Vol. 45 No. 98, Monday, May 19, 1980,  
Rules and Regulations, Appendix II, Page 33127.

FIELD DATA: Sample ID: 8000 gal Tank, 3/5/87  
Collected by: Sample collected and delivered by client.

Sample Received: March 5, 1987

ANALYSIS	RESULTS	LIMIT
-----	-----	-----
Arsenic	< 0.100	5.0
Barium	0.028	100
Cadmium	0.015	1.0
Chromium	< 0.010	5.0
Lead	< 0.100	5.0
Mercury	< 0.100	0.2
Selenium	< 0.100	1.0
Silver	< 0.010	5.0

< denotes "less than" the detection limit for the method.  
Results are reported in milligrams per liter (mg/L)

REPORT CONTINUES

Weld shop - liquid  
initial test  
(no rxn)

This report is for the sole and exclusive use of the above client.  
Samples are retained a maximum of 15 days from the date of this letter.

CRAW00004385



# COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.

Portland, OR 97230

Phone: (503) 254-1794

March 13, 1987

Log #AE700305-I

PO#: 2789

Columbia Forge & Supply

Page Two

Attention: John Shore

Analysis Requested: Solvent Scan

Sample ID: 8000 gal. Tank

Sample Received: March 5, 1987

~~CONTENTS~~  
DIESEL TANK, COLUMBIA FORGE

## ANALYSIS

## RESULTS

Acetone	< 500
1,1,2,2-Tetrachloroethane	< 100
m-Dichlorobenzene	< 100
n-Butyl acetate	< 100
o-Dichlorobenzene	< 100
Chlorobenzene	< 100
Diethyl ether	< 500
Ethanol	< 500
Ethyl acetate	< 500
Ethyl benzene	< 100
Freon 113	< 100
Isopropyl alcohol	< 500
Methanol	< 500
Methyl ethyl ketone	< 300
Methyl isobutyl ketone	< 100
Methylene chloride	< 100
Tetrachloroethylene	< 100
Toluene	< 100
Trichloroethylene	< 100
1,1,1-Trichloroethane	< 100
Xylenes	< 100

Results in mg/L

Analysis by carbon disulfide extraction, GC/FID and methanol extraction GC/MS.

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

REPORT CONTINUES

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.



# COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.  
Portland, OR 97230  
Phone: (503) 254-1794

March 13, 1987  
Log #A870305-I  
PO#: 2789

Columbia Forge & Machine  
Page Three

Attention: John Shore

Sample ID: 8000 gal. Tank

Sample Date: March 5, 1987

Sample Received: March 5, 1987

CONTENTS, DIESEL TANK, COLUMBIA  
FORGE

ANALYSIS	METHOD	RESULTS
Flash Point	ASTM D97-77	> 150 degrees F
Diesel	*	4300 mg/L
Polychlorinated Biphenyls	**	< 1 mg/kg
Reactivity	---	None Detected
Corrosivity	---	None Detected

\* Analysis by Methylene chloride extraction, capillary GC/FID.

\*\* Analysis by GC/ECD and comparison with standard Aroclor solutions.

> denoted "greater than"

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

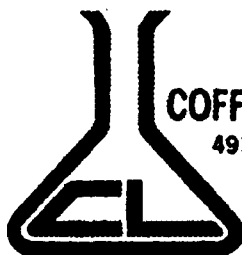
Sincerely,

*Susan M. Coffey*  
Susan M. Coffey,  
President

SNC/qs

This report is for the sole and exclusive use of the above client.  
Samples are retained a maximum of 15 days from the date of this letter.

CRAW00004387



# COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.  
Portland, OR 97230  
Phone: (503) 254-1794

March 19, 1987  
Log #A870316-B1-2  
PO#: 2842

Columbia Forge & Machine  
8424 N. Crawford St.  
Portland, Oregon 97203

Attention: John Shore

Sample ID: #1 - Skookum, 3/13/87  
#2 - Yard, 3/13/87

Samples Received: March 13, 1987

Samples Collected by: Crosby & Overton

## ANALYSIS

Gasoline\*

< 1.0

16\*\*

Diesel\*

< 1.0

< 1.0

Lead

---

30.0

## Results in mg/kg

\* Analysis by extraction capillary GC/FID.

\*\* Appears to contain some other high boiling oil and possibly some kerosene.

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

Approved by,

*Susan M. Brillante*

Susan M. Brillante,  
Laboratory Director

Sincerely,

*Susan M. Coffey*

Susan M. Coffey,  
President

SMC/gs

This report is for the sole and exclusive use of the above client. Samples are retained a maximum of 15 days from the date of this letter.

\$285 CF+mw

3200 Crawford

SOIL ANALYSIS. #1 = Diesel tank at Skookum. #2 = gasoline tank @ Columbia Forge

CL. FORGE/CROSBY & OVERTON  
SAMPLE #2

Soil analysis  
Yard & Skookum



# COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.  
Portland, OR 97230  
Phone: (503) 254-1794

March 24, 1987  
Log #A870309-F

Columbia Forge & Machine  
8424 N. Crawford St.  
Portland, Oregon 97203

ATTENTION: John Shore

SOIL BENEATH GASOLINE TANK,  
COLUMBIA FORGE

SUBJECT: EP TOXICITY ANALYSIS

METHOD: Federal Register, Vol. 45 No. 98, Monday, May 19, 1980,  
Rules and Regulations, Appendix II, Page 33127.

FIELD DATA: Sample ID: #2 Tank, 3/9/87, 1230  
Collected by: Sample collected and delivered by client.

Sample Received: March 9, 1987

ANALYSIS	RESULTS	LIMIT
-----	-----	-----
Arsenic	< 0.100	5.0
Barium	0.031	100
Cadmium	< 0.010	1.0
Chromium	< 0.010	5.0
Lead	< 0.100	5.0
Mercury	< 0.100	0.2
Selenium	< 0.100	1.0
Silver	< 0.010	5.0

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

Results are reported in milligrams per liter (mg/L)

REPORT CONTINUES

This report is for the sole and exclusive use of the above client.  
Samples are retained a maximum of 15 days from the date of this letter.



# COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.  
Portland, OR 97230  
Phone: (503) 254-1794

March 24, 1987  
Log #A870316-B1-2

Columbia Forge & Machine  
8424 N. Crawford St.  
Portland, Oregon 97203

ATTENTION: John Shore

SOIL BENEATH GASOLINE TANK, COLUMBIA  
FORGE

SUBJECT: EP TOXICITY ANALYSIS

METHOD: Federal Register, Vol. 45 No. 98, Monday, May 19, 1980,  
Rules and Regulations, Appendix II, Page 33127.

FIELD DATA: Sample ID: #2 - Yard  
Collected by: Sample collected and delivered by client.

Sample Received: March 16, 1987

ANALYSIS -----	RESULTS -----	LIMIT -----
Lead	< 0.100	5.0

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

Results are reported in milligrams per liter (mg/L)

Sincerely,

*Susan M. Coffey*  
Susan M. Coffey,  
President

SMC/ga

This report is for the sole and exclusive use of the above client.  
Samples are retained a maximum of 15 days from the date of this letter.

CRAW00004390



**COFFEY LABORATORIES, INC.**

4914 N.E. 122nd Ave.

Portland, OR 97230

Phone: (503) 254-1794

March 24, 1987

Log #A870319-K

PO#: 2864

Columbia Forge & Machine  
8424 N. Crawford St.  
Portland, Oregon 97203

Attention: John Shore

Analysis Requested: Total Hydrocarbons

Sample ID: #3 Weld Shop

Sample Date: March 19, 1987

Sample Received: March 19, 1987

**ANALYSIS**

-----

Gasoline

Diesel

**RESULTS**

-----

< 4 mg/kg

< 4 mg/kg

Analysis by capillary GC/FID

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

Approved,

*Susan M. Brillante*

Susan M. Brillante,  
Laboratory Director

SMC/ga

Sincerely,

*Susan M. Coffey*

Susan M. Coffey,  
President

*Soil analysis  
Weld shop  
(no rust)*

This report is for the sole and exclusive use of the above client.  
Samples are retained a maximum of 15 days from the date of this letter.



# COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.

Portland, OR 97230

Phone: (503) 254-1794

March 24, 1987

Log #A870309-P

Columbia Forge & Machine  
Page Two

Attention: John Shore

Analysis Requested: Solvent Scan

Sample ID: #2 Tank, 3/9/87, 1230

Sample Received: March 9, 1987

CONTENTS / DIESEL TAN  
COLUMBIA  
FORGE

## ANALYSIS

## RESULTS

Acetone	< 500
Chlorobenzene	< 100
M-Dichlorobenzene	< 100
O-Dichlorobenzene	< 100
Ethanol	< 500
Ethyl benzene	< 100
Freon 113	< 100
Isopropyl alcohol	< 500
Methanol	3600
Methylene chloride	< 100
Methyl ethyl ketone	< 300
Methyl isobutyl ketone	< 200
1,1,2,2-Tetrachloroethane	< 100
Tetrachloroethylene	< 100
Toluene	< 100
1,1,1-Trichloroethane	< 100
Trichloroethylene	< 100
Xylene	< 300

Results in mg/L

Analysis by carbon disulfide extraction, GC/FID and methanol extraction GC/HECD.

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

REPORT CONTINUES

This report is for the sole and exclusive use of the above client.  
Samples are retained a maximum of 15 days from the date of this letter.



# COFFEY LABORATORIES, INC.

4914 N.E. 122nd Ave.

Portland, OR 97230

Phone: (503) 254-1794

March 24, 1987

Log #A870309-F

*Crawford*

Columbia Forge & Machine  
Page Three

Attention: John Shore

Sample ID: #2 Tank, 3/9/87, 1230

Sample Received: March 9, 1987

*CONTENTS, DIESEL TANK,  
COLUMBIA FORGE*

ANALYSIS	METHOD	RESULTS
Flash Point	ASTM D97-77 Closed-cup	> 150 degrees F
Reactivity	---	None
Corrosivity	---	None
Gasoline	*	5.0 mg/L
Diesel	*	< 1.0 mg/L

\* Analysis by extraction capillary GC/FID.

> denotes "greater than"

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

Approved,

*Susan M. Brillante*  
Susan M. Brillante,  
Laboratory Director

SMC/gs

Sincerely,

*Susan M. Coffey*  
Susan M. Coffey  
President

*liquid yard  
not rush*

This report is for the sole and exclusive use of the above client.  
Samples are retained a maximum of 15 days from the date of this letter.

CRAW00004393

**APPENDIX 2**  
**Sampling Methods**

**LAMP2-TP.404bg**

**CRAW00004394**

APPENDIX 2  
SAMPLING METHODS

**Water Samples; Suspected Fill/Distribution Tank Pipes**

The four water samples collected from the suspected tank fill/distribution pipes at the former sawmill and planing mill were collected using a single check-valve Teflon bailer. Monofilament nylon ("Weedeater") cord was used to lower the bailer in and out of the pipes. The bailer and cord were cleaned before use in each pipe by disassembling the bailer and washing it and the cord with 1) a dilute non-phosphatic detergent solution, 2) a rinse with distilled water, 3) a rinse with methanol, and 4) a final rinse with distilled water. The bailer was also rinsed once with sample water before filling any sample bottles. The tested samples are named AT-1, AT-2, and AT-3. The "AT" means "assumed tank"; the number indicates sample location in the serial order the location was sampled.

**Boring and Soil Sample Nomenclature**

The borings are named T-1 and T-2. The "T" denotes that it was a reconnaissance, or "test," boring; the number designates the serial order in which the borings were drilled. Soil samples from the borings were labelled S-1, S-2, etc., the "S" indicating a soil sample and the number designating the serial order in which the samples were collected. The shallowest sample is labelled S-1. Soil samples from test pit 7 were named in the same manner.

LAMP2-APP.226bg

## Drilling Method

The borings were drilled using a truck-mounted CME 55 drilling rig equipped with 3.75-in inside-diameter hollow-stem auger. The rig and crew were from Geo-Tech Explorations (North Plains, OR). The drill rig, downhole equipment and hand tools that contacted the rig or downhole equipment were steam cleaned onsite before drilling the boring. The water used for steam cleaning was obtained from a faucet at Columbia Forge and was stored in a water tank on the rig prior to use.

Soil samples were collected at five-foot intervals using standard split-spoon samplers. The samplers were pushed, not driven, into the soil. The samplers were steam cleaned before their initial use and between borings, but were washed with tap water from the drill rig's water tank between the collection of individual samples in each boring.

The samples were described and logged in the field by a Sweet-Edwards/EMCON geologist. Each sample was described as to soil type(s), moisture content, geologic bedding, its content of manmade objects and its appearance with respect to possible visual evidence of contamination. Each soil sample was placed in a separate "Ziplock"-style plastic bag, labelled as to identity, project and date of collection. The samples were archived.

After the borings were drilled to their final depths and had been sampled for ground water, the borings were abandoned by backfilling with Baroid-brand bentonite chips. The chips were placed by slowly pouring them down the inside of the auger and gradually backpulling the auger until all auger was out of the ground and the boring filled to within one foot of the ground surface. The remaining foot was filled with soil. Cuttings from the borings were left by the boreholes and were smoothed out on the ground using shovels.

LAMP2-APP.226bg

## Ground Water Sampling Method

Once the water table was reached, as judged by the moisture content of soil samples and drill cuttings, the borings were deepened to provide about four feet of water inside the auger. A small-diameter metal dart-valve bailer was tripped in and out of the auger several times to remove thick, slurry-like cuttings before collecting the ground water samples. A single check-valve Teflon bailer was lowered into the auger to fill with water for the purpose of collecting the actual samples. The bailer was then withdrawn from the auger; its contents were then poured into the sample containers. Monofilament nylon ("Weedeater") cord was used to lower the bailer in and out of the auger. A second water sample was taken at boring T-2. After the first sample was taken, T-2 was deepened 10 feet. However, the driller mistakenly pulled back the auger too much and the bottom of the unsupported borehole collapsed. The result was that the second water sample at T-2 was taken from a shallower depth than originally intended and in fact partly overlapped the depth from which the first sample was taken.

All ground water sampling equipment was cleaned before use by disassembling it and washing it with a dilute non-phosphatic detergent solution, rinsing with distilled water, rinsing with methanol, and rinsing again with distilled water. This applied to the Teflon bailer and the cord used to lower it. The bailer was also rinsed once with sample water before filling any sample bottles.

After collection, the sample bottles were stored on ice and transported to Columbia Analytical Services. Chain of Custody forms were used to track handling of the samples; the relevant custody forms are attached in the original laboratory reports in Appendix 6.

LAMP2-APP.226bg

## **APPENDIX 3**

### **Boring Logs**

LAMP2-TP.404bg

CRAW00004398



## BORING LOG

**PROJECT** MMI (Lampros Steel Site)

Page 1 of 2

**Location** See plan

Boring No. T-1

**Surface Elevation Approximately 30ft.**







### Drilling Method Hollow-stem auger


**Total Depth** 41 ft.

**Drilled By Geo-Tech Explorations**

**Date Completed** January 4, 1988

Logged By J. Morales

WELL DETAILS	PENE- TRATION TIME/ RATE	DEPTH (FEET)	SOIL SAMPLE		WATER SAMPLE	SYMBOL	LITHOLOGIC DESCRIPTION	WATER LEVEL
			NO.	TYPE				
Backfilled with bentonite chips		-5	S1	SS			4.5-6.0' <u>SILT</u> , 10-15% fine sand, light brown, slightly moist. Dark gray 5.2-6.0 ft. with wood fragments.	
		-10	S2	SS			9.5-10.0' <u>SILT</u> , 10-15% fine sand, light brown, slightly moist. Graded down to sand. 10-10.5' <u>FINE SAND</u> , 5-15% silt, <5% clay, light brown, slightly moist, color banding.	
		-15	S3	SS			14.5-16.0' <u>SILTY FINE SAND</u> , 30-35% silt, light brown to dark gray, dry, micaceous, sandier with depth.	
		-20	S4	SS			19.5-21.0' <u>SILTY FINE SAND</u> , 20-30% silt, green-brown, moist, bedded with bed contact at 20.5 ft.	
		-25	S5	SS			24.5-26.0' <u>SANDY SILT</u> , 20% fine sand, brown-green, moist, local laminations, root traces, micaceous.	
		-30	S6	SS			29.5-31.0' <u>CLAYEY SILT</u> , 20% clay, brown-green, moist, less clayey with depth.	
		-35						

 34 ft. below ground

**SEA-300-02a**

CRAW00004399



Sweet, Edwards &amp; Associates, Inc.

**BORING LOG**PROJECT MMI (Lampros Steel Site)Page 2 of 2Boring No. T-1

WELL DETAILS	PENE- TRATION TIME/ RATE	DEPTH (FEET)	SOIL SAMPLE		WATER SAMPLE	SYMBOL	LITHOLOGIC DESCRIPTION	WATER LEVEL
			NO.	TYPE				
Backfilled with bentonite chips		35	S7	SS	W-1		34.5-36.0' CLAYEY SILT, <10% fine sand, 60-70% silt, 20-30% clay, brown-green, saturated, mottled.	
		40	S8	SS			39.5-41.0' FINE SAND, 10% silt, blue-green, saturated, micaceous.	
		45					SS = Split Spoon Sample. All soil samples taken by pushing sampler into ground.	

SEA-300-02b

CRAW00004400



Sweet, Edwards &amp; Associates, Inc.

## BORING LOG

PROJECT MMI (Lampros Steel Site)Page 1 of 2Location See planBoring No. T-2Surface Elevation Approximately 30ft.Drilling Method Hollow-stem augerTotal Depth 44.5 ft.Drilled By Geo-Tech ExplorationsDate Completed January 4, 1988Logged By J. Morales

WELL DETAILS	PENE- TRATION TIME/ RATE	DEPTH (FEET)	SOIL SAMPLE		WATER SAMPLE	SYMBOL	LITHOLOGIC DESCRIPTION	WATER LEVEL
			NO.	TYPE				
Backfilled with bentonite chips		5	S1	SS			4.5-6.0' <u>MEDIUM-COARSE BLACK SAND</u> , 20% wood fragments, slightly moist.	
		10	S2	SS			9.5-10.5' <u>CLAYEY SILT</u> , 30% clay, blue-green, slightly moist, sticky, interlayered wood waste. Soil is mottled.	
							10.5-11.0' <u>MEDIUM SAND</u> , 10% silt, dark gray to black, slightly moist.	
		15	S3	SS			14.5-16.0' <u>CLAYEY SILT</u> , 5% fine sand, 20% clay, blue-green, slightly moist, interlayered wood fibers in silt.	
		20	S4	SS			19.5-20.5' <u>CLAYEY SILT</u> , 20% clay, blue-green, moist.	
							20.5-21.0' <u>SILT</u> , 18% fine sand, dark brown to black mottled, micaceous. Wood fiber banding at 21.0 ft.	
		25	S5	SS			24.5-26.0' <u>CLAYEY SILT</u> , 15-20% clay, blue-green, moist.	
		30	S6	SS			29.5-30.0' <u>CLAYEY SILT</u> , 20-30% clay, green-brown, moist, common laminations and mottling.	
							30.0-31.0' <u>FINE MEDIUM SAND</u> , 10% silt, dark brown to black, moist.	
		35			W-1			
								▽ 32.4 ft. below ground



SEA-300-02a

CRAW00004401



Sweet, Edwards &amp; Associates, Inc.

**BORING LOG**PROJECT MMI (Lampros Steel Site)Page 2 of 2Boring No. T-2

WELL DETAILS	PENE- TRATION TIME/ RATE	DEPTH (FEET)	SOIL SAMPLE		WATER SAMPLE	SYMBOL	LITHOLOGIC DESCRIPTION	WATER LEVEL
			NO.	TYPE				
Backfilled with bentonite chips		35	S7	SS	W-1		34.5-36.0' SILTY FINE SAND, 20-30% silt, light brown, saturated.	
		40	S8	SS	W-2		39.5-41.0' SAND, 10% silt, blue- green, saturated, micaceous.	
		45					SS = Split Spoon Sample. All samples taken by pushing sample into ground.	

SEA-300-02b

CRAW00004402

#### **APPENDIX 4**

#### **Ground-penetrating Radar Survey Williamson and Associates Report**

**LAMP2-TP.404bg**

**CRAW00004403**

**WILLIAMSON & ASSOCIATES, INC.**

OCEANOGRAPHY AND MARINE GEOPHYSICS

1219 Westlake Ave. N.  
Suite 111  
Seattle, WA 98109  
(206) 282-2396Sweet, Edwards & Associates, Inc.  
P.O. Box, Drawer D  
Kelso, WA 98626

January 5, 1988

**ATTENTION: Mr. Russ Bunker, R.G.**

On December 26th, 1987, Williamson and Associates mobilized a geophysical survey team and a ground penetrating radar system to a site on the Willamette River, near St. Johns Oregon.

The purpose of the geophysical survey was to determine if Ground Penetrating Radar could be used to locate buried utilities, tanks or drums or other anomalous subsurface soil conditions at the site.

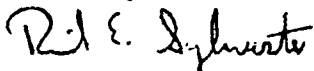
A series of test runs were made with the GPR over known targets of known depth, over various surficial soil types and across concrete structures.

Analysis of these data indicated that the GPR was only capable of achieving 6 to 9 feet of penetration over most of the area of interest. Tests prior to mobilizing and after returning from the site provided 30 feet of penetration assuring us that the system was fully operational. We felt that 15 to 20 feet of penetration was needed to be sure that no subsurface targets were missed.

We believe that the lack of penetration is a result of attenuation by the black-top surface which covers most of the site as well as the sand used for a grinding compound. We were unable to obtain any penetration into the concrete which is probably due to the internal rebar and screening.

We appreciated the opportunity to evaluate the GPR on this project and hope that we will have a chance to work with you again where the results will prove more successful.

Sincerely:

Williamson and Associates  
Richard E. Sylwester  
Senior Geophysicist

**APPENDIX 5**  
**Electromagnetic (EM) Induction Survey**  
**Geo-Recon Report**

**LAMP2-TP.404bg**

**CRAW00004405**

# GEO RECON INTERNATIONAL



geophysics archeology geology

December 28, 1987

Sweet & Edwards, Inc.  
506 Royal Street, West  
Kelso, WA 98626

Re: St. Johns, Oregon Plant site.

Gentlemen:

At your request we completed an electromagnetic study of a site in St. Johns, Oregon adjacent to the Willamette River. The purpose of this study was to determine the probability for the existence of buried tanks within the confines of the site. The site was traversed at approximate ten foot spacings and any probable targets were not on the ground with survey paint. This was accomplished on December 27, 1987 by a two person field crew from Geo Recon.

Four possible targets were located and indicated to your field representative at the end of the study. An area south of the large building floor pad was also noted as having significantly different characteristics than the remainder of the site and may represent different deposits such as wasted concrete containing rebar or other metallic debris. Several subsurface pipes and a buried railroad track were also noted.

We trust this is sufficient for your needs and appreciate the opportunity to work for your firm again.

For: Geo Recon International Ltd.

*Clyde A. Ringstad*  
Clyde A. Ringstad  
Principal Geophysicist

**APPENDIX 6**  
**Laboratory Report**  
**Soil and Ground Water Testing**

**LAMP2-TP.404bg**

**CRAW00004407**

# Columbia Analytical Services, Inc.

1152 3rd Avenue • Longview, WA 98632 • (206) 577-7222

---

February 2, 1988

Randy Sweet  
Sweet & Edwards  
P.O. Box Drawer B  
Kelso, WA 98626

RE: MMI (LAMPROS STEEL SITE); CAS Work Order # 87728

Dear Randy:

Enclosed are the results of samples submitted to our lab on November 11, 1987. For your reference, our service request number for this work is 87728.

Please call if you have any questions.

Respectfully submitted:  
COLUMBIA ANALYTICAL SERVICES, INC.

*Mike Shelton*

Mike Shelton

COLUMBIA ANALYTICAL SERVICES, INC.  
1152 3RD AVE. LONGVIEW, WA 98632  
(206) 577-7222

CLIENT: Sweet & Edwards  
--Randy Sweet

February 2, 1988

PROJECT: MMI (LAMPROS STEEL SITE)

WORK ORDER #: 87728

Analytical Report  
mg/L in EP extract

Sample Name:

11/11/87

Lab Code:

728-1

Test Parameters

Maximum Level

Arsenic

5.0

<0.01

Barium

100

0.31

Cadmium

5.0

<0.005

Chromium

5.0

<0.01

Lead

5.0

<0.05

Mercury

0.2

<0.001

Selenium

1.0

<0.01

Silver

5.0

<0.01

Approved by:

*Mike Shelton*

Date:

*2/2/88*

# Columbia Analytical Services, Inc.

1152 3rd Avenue • Longview, WA 98632 • (206) 577-7222

February 2, 1988

Russ Bunker  
Sweet & Edwards  
P.O. Box 328  
Kelso, WA 98626

TZ401.02  
(Suspected Tank-Fill  
Pipes' Wtr Samples)

RE: MMI (LAMPROS STEEL SITE)

Dear Russ:

Listed below are the results of samples submitted to our lab on December 22, 1987. For your reference, our service request number for this work is 87817.

Please call if you have any questions.

## Analytical Report mg/L

Sample Name:	AT-3	AT-4	AT-5
Lab Code:	817-1	817-2	817-3
pH	5.8	5.5	5.9
Conductivity umhos/cm	80	68	88

Respectfully submitted:  
COLUMBIA ANALYTICAL SERVICES, INC.

*Mike Shelton*

Mike Shelton



SW 204 S & Cecil, Inc.

**Kelso, WA (206) 423-3580**

Redmond, WA (206) 881-0415

## Laboratory Analysis Request

DATE 12/11/64 PAGE 1 OF 1

PROJECT <u>Henry Trailing</u> # <u>741112</u>					ANALYSIS REQUESTED															GENERAL CHEMISTRY (Specify)										OTHER (Specify)		NUMBER OF CONTAINERS
CLIENT INFO. CONTACT <u>24 N. W. 11th</u> ADDRESS _____ TELEPHONE# _____					BASE/NEU/ACID ORGAN. GC/MS/825/8270	VOLATILE ORGANICS GC/MS/824/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/8060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) (See Special Inst.)	TCLP ORGANICS	PH, COND ALK	NO <sub>3</sub> /NO <sub>2</sub> -Cl SO <sub>4</sub>	Ca, Mg, Na, K	VOLATILE	PCB's													
SAMPLERS NAME <u>Bunker</u>	PHONE# <u>766-403-5160</u>	SAMPLERS SIGNATURE <u>R. Bunker</u>	SAMPLE I.D.	DATE																				TIME	LAB I.D.	TYPE						
1. AT-3	12/2/87	1315	817-1	WTR																					2							
2. AT-3	"	"	-1	"																					1							
3. AT-3	"	"	-1	"																					1							
4.																																
5.																																
6.																																
7.																																
8.																																

Relinquished By Sweet, Edwards & Assoc. <u>R. Bunker</u>		Relinquished By		Relinquished By		PROJECT INFORMATION		SAMPLE RECEIPT	
Signature	Printed Name	Signature	Printed Name	Signature	Printed Name	Shipping I.D. No.	Chain of Custody	Total No. of Containers	Received in good condition
<u>Russell C. Bunker</u>	<u>Sweet-Edwards &amp; Assoc.</u>								
<u>12/2/87</u>	<u>1720</u>								
<u>Received By</u> <u>James P. Bunker</u>	<u>Signature</u>	<u>Signature</u>	<u>Printed Name</u>	<u>Signature</u>	<u>Printed Name</u>	<u>Project</u>	<u>SPECIAL INSTRUCTIONS/COMMENTS</u>		
<u>Printed Name</u>	<u>Firm</u>	<u>Signature</u>	<u>Printed Name</u>	<u>Signature</u>	<u>Printed Name</u>				
<u>Date/Time</u>	<u>Date/Time</u>	<u>Signature</u>	<u>Printed Name</u>	<u>Signature</u>	<u>Printed Name</u>				
<u>12/2/87</u>	<u>1720</u>	<u>Signature</u>	<u>Printed Name</u>	<u>Signature</u>	<u>Printed Name</u>				
<u>12/2/87</u>	<u>1720</u>	<u>Signature</u>	<u>Printed Name</u>	<u>Signature</u>	<u>Printed Name</u>				

**DISTRIBUTION:** WHITE - return to originator; YELLOW - lab; PINK - retained by originator.

**SEA-400-05**

CRAW00004411



Sweet, Edwards &amp; Associates, Inc.

Kelso, WA (206) 423-3580

Redmond, WA (206) 881-0415

## Laboratory Analysis Request

DATE 12/21/87 PAGE 1 OF 1

PROJECT <u>Henry Trading</u> # <u>T24 C122</u>					ANALYSIS REQUESTED															GENERAL CHEMISTRY (Specify)					OTHER (Specify)					NUMBER OF CONTAINERS
CLIENT INFO. CONTACT <u>Norm Wille</u>					BASE/NEU/ACID ORGAN.	GC/MS 625/8270	VOLATILE ORGANICS	GC/MS 624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS	604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 5020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) (See Special Inst.)	TCLP ORGANICS	pH, COND ALK	NO <sub>3</sub> /NO <sub>2</sub> , Cl SO <sub>4</sub>	Ca, Mg, Na, K	<u>Vol. H<sub>2</sub>O</u>	<u>PCBS</u>								
SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE																										
1. AT-4	12/21/87	1345	817-2	WTL																	✓									2
2. AT-4	"	"	-2	"																		✓								1
3. AT-4	"	"	-2	"										✓																1
4.																														
5.																														
6.																														
7.																														
8.																														

Relinquished By Sweet, Edwards & Assoc.		Relinquished By		Relinquished By		PROJECT INFORMATION		SAMPLE RECEIPT	
Signature <u>Russ Bunker</u>	Signature	Signature		Signature		Shipping I.D. No.		Total No. of Containers	
Printed Name <u>Russ Bunker</u>	Printed Name	Printed Name		Printed Name		VIA		Chain of Custody Seals	
Firm <u>Sweet-Edwards</u>	Firm	Firm		Firm		Project		Received in good condition	
Date/Time <u>12/21/87 1320</u>	Date/Time	Date/Time		Date/Time		SPECIAL INSTRUCTIONS/COMMENTS			
Received By <u>T. J. Edwards</u>	Received By	Received By		Received By					
Signature	Signature	Signature		Signature					
Printed Name	Printed Name	Printed Name		Printed Name					
Firm	Firm	Firm		Firm					
Date/Time	Date/Time	Date/Time		Date/Time					

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator.

SEA-400-05

CRAW000004412



Sweet, Edwards & Associates, Inc.

Kelso, WA (206) 423-3580

Redmond, WA (206) 881-0415

# Laboratory Analysis Request

DATE 12/21/13 PAGE 1 OF 1

PROJECT <u>Peace Treaty # T24112</u>					ANALYSIS REQUESTED														GENERAL CHEMISTRY (Specify)				OTHER (Specify)		NUMBER OF CONTAINERS
CLIENT INFO. CONTACT <u>Kevin L. Kelly</u>					BASE/NEU/ACID ORGAN. GC/MS/825/8270	VOLATILE ORGANICS GC/MS/824/8240	HALOGENATED VOLATILE ORGANICS 801/8010	PHENOLICS 804/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9080	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) (See Special Inst.)	TCLP ORGANICS	pH, COND ALK	NO <sub>3</sub> /NO <sub>2</sub> , Cl SO <sub>4</sub>	Ca, Mg, Na, K	Volatile	VCB						
SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE																					
1. AT-5	12/21/13	1400	817-3	INTL																2					
2. AT-5	"	"	-3	"																1					
3. AT-5	"	"	-3	"																1					
4.																									
5.																									
6.																									
7.																									
8.																									

Relinquished By Sweet, Edwards & Assoc.		Relinquished By		PROJECT INFORMATION		SAMPLE RECEIPT	
Signature <u>Kevin L. Kelly</u>	Signature	Signature		Shipping I.D. No.	Total No. of Containers		
Printed Name <u>Kevin L. Kelly</u>	Printed Name	Printed Name		VIA	Chain of Custody Seals		
Firm <u>Sweet-Edwards</u>	Firm	Firm		Project	Received in good condition		
Date/Time <u>12/21/13 1720</u>	Date/Time	Date/Time			LAB NO.		
Received By <u>Kevin L. Kelly</u>	Received By	Received By		SPECIAL INSTRUCTIONS/COMMENTS			
Signature	Signature	Signature					
Printed Name	Printed Name	Printed Name					
Firm	Firm	Firm					
Date/Time	Date/Time	Date/Time					

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator.

SEA-400-05

CRAW000004413

# Columbia Analytical Services, Inc.

1152 3rd Avenue • Longview, WA 98632 • (206) 577-7222

February 2, 1988

Russ Bunker  
Sweet & Edwards  
P.O. Box Drawer B  
Kelso, WA 98626

T24C1.02

(Ground-water samples,  
Test bags, T-1, T-2)

RE: MMI (LAMPROS STEEL SITE)

Dear Russ:

Listed below are the results of samples submitted to our lab on January 5, 1987. For your reference, our service request number for this work is 88002.

Please call if you have any questions.

## Analytical Report

Sample Name:	T-1/W-1	T-2/W-1	T-2/W-2
Lab Code:	002-1	002-2	002-3
Nitrate-N	mg/L 2.4	0.14	0.10
Total Organic Carbon	mg/L 2.0	25	56
TOX	ppb <5	11.5	13.8

Respectfully submitted:  
COLUMBIA ANALYTICAL SERVICES, INC.

*Mike Shelton*

Mike Shelton



Sweet, Edwards & Associates, Inc.

Kelso, WA (206) 423-3580

Redmond, WA (206) 881-0415

# Chain of Custody/ Laboratory Analysis Request

DATE 1-5-88

PAGE 1 OF 1

PROJECT <u>Acme Trading</u> # <u>T2401.02</u>					ANALYSIS REQUESTED															GENERAL CHEMISTRY (Specify)					OTHER (Specify)					NUMBER OF CONTAINERS
CLIENT INFO. CONTACT <u>Russ Bunker</u>					BASE/NEU/ACID ORGAN. GC/MS/825/8270	VOLATILE ORGANICS GC/MS/824/8240	HALOGENATED VOLATILE ORGANICS GC/MS/801/8010	PHENOLICS 804/8040	POLYNUCLEAR AROMATIC 810/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) (See Special Inst.)	TCLP ORGANICS	PH. COND	ALK	NO <sub>3</sub> /NO <sub>2</sub> Cl	SO <sub>4</sub>	Ca, Mg, Na, K	NO <sub>3</sub> /TOC	TOX									
ADDRESS <u>Sweet-Edwards/EMCON</u>																														
TELEPHONE# <u>206-423-3580</u>																														
SAMPLERS NAME <u>R Bunker</u> PHONE# <u>206-423-3580</u>																														
SAMPLERS SIGNATURE <u>R Bunker</u>																														
SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE																										
1. T-1/W-1	1-4-88	1140	002-1	WTR															✓											
2. T-1/W-1	"	1140	002-1	WTR																✓										
3. T-2/W-1	"	1600	002-2	WTR															✓											
4. T-2/W-1	"	1600	002-2	WTR																✓										
5. T-2/W-2	"	1700	002-3	WTR															✓											
6. T-2/W-2	"	1700	002-3	WTR																✓										
7.																														
8.																														
Relinquished By Sweet, Edwards & Assoc. <u>R Bunker</u>					Relinquished By					Relinquished By					PROJECT INFORMATION					SAMPLE RECEIPT										
Signature <u>Russ Bunker</u>					Signature					Signature					Shipping I.D. No.					Total No. of Containers										
Printed Name <u>Sweet Edwards</u>					Printed Name					Printed Name					VIA					Chain of Custody Seal										
Firm <u>1-5-88 1015</u>					Firm					Firm					Project					Received in good condition										
Date/Time					Date/Time					Date/Time										LAB NO.										
Received By <u>Steve Vincent</u>					Received By					Received By					SPECIAL INSTRUCTIONS/COMMENTS <u>Analyze wtr from settled sample, i.e., do not test sediment</u>															
Signature <u>Steve Vincent</u>					Signature					Signature																				
Printed Name <u>CAS</u>					Printed Name					Printed Name																				
Firm <u>1-5-88 1015</u>					Firm					Firm																				
Date/Time					Date/Time					Date/Time																				

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator.

SEA-400-05

CRAW00004415

*Columbia Analytical Services, Inc.*

1152 3rd Avenue • Longview, WA 98632 • (206) 577-7222

---

February 2, 1988

*test pit soil samples*

Russ Bunker  
Sweet & Edwards  
P.O. Box Drawer B  
Kelso, WA 98626

RE: MMI (LAMPROS STEEL SITE)

Dear Russ:

Enclosed are the results of samples, including PCB results, submitted to our lab on January 6, 1988. For your reference, our service request number for this work is 88012.

Please call if you have any questions.

Respectfully submitted:  
COLUMBIA ANALYTICAL SERVICES, INC.

*Colin Elliott /ms*

Colin Elliott

COLUMBIA ANALYTICAL SERVICES, INC.  
1152 3RD AVE. LONGVIEW, WA 98632  
(206) 577-7222

CLIENT: Sweet & Edwards  
--Russ Bunker  
PROJECT: MMI (LAMPROS STEEL SITE)

February 2, 1988  
WORK ORDER #: 88012

Analytical Report  
(dry basis)

Sample Name	Lab Code	Oil & Grease %	TOX ppm	PCB ppm
TP-1/S-1	012-1	<0.01	<2	-
TP-4/S-2	012-2	<0.01	<2	-
TP-7/S-1	012-3	0.04	294	<0.2
TP-7/S-2	012-4	0.05	2.9	-

Approved by:

*Mike Shelton*

Date:

*2/2/88*

COLUMBIA ANALYTICAL SERVICES, INC.  
1152 3RD AVE. LONGVIEW, WA 98632  
(206) 577-7222

CLIENT: Sweet & Edwards  
--Russ Bunker  
PROJECT: MMI (LAMPROS STEEL SITE)

February 2, 1988  
WORK ORDER #: 88012

Volatile Organics Results  
ug/Kg (ppb)

Sample Name: Lab Code:	TP-1/S-1 012-1	TP-4/S-1 012-2	TP-7/S-1 012-3	TP-7/S-2 012-4
Chloromethane	<50	<50	<50	<50
Vinyl Chloride	<50	<50	<50	<50
Bromomethane	<50	<50	<50	<50
Chloroethane	<50	<50	<50	<50
1,1-Dichloroethene	<50	<50	<50	<50
Methylene Chloride	<200	<200	<200	<200
Trans 1,2-Dichloroethene	<50	<50	<50	<50
1,1-Dichloroethane	<50	<50	<50	<50
Chloroform	<50	<50	<50	<50
1,1,1-Trichloroethane	<50	<50	<50	<50
Carbon Tetrachloride	<50	<50	<50	<50
Benzene	<50	<50	<50	<50
1,2-Dichloroethane	<50	<50	<50	<50
Trichloroethene	<50	<50	<50	<50
1,2-Dichloropropane	<50	<50	<50	<50
Bromodichloromethane	<50	<50	<50	<50
2-Chloroethylvinyl ether	<500	<500	<500	<500
Trans 1,3-Dichloropropene	<50	<50	<50	<50
Toluene	<50	<50	<50	<50
Cis 1,3-Dichloropropene	<50	<50	<50	<50
1,1,2-Trichloroethane	<50	<50	<50	<50
Tetrachloroethene	<50	<50	<50	<50
Dibromochloromethane	<50	<50	<50	<50
Chlorobenzene	<50	<50	<50	<50
Ethylbenzene	<50	<50	<50	<50
Bromoform	<50	<50	<50	<50
1,1,2,2-Tetrachloroethane	<50	<50	<50	<50
1,3 Dichlorobenzene	<50	<50	<50	<50
1,4 Dichlorobenzene	<50	<50	<50	<50
1,2 Dichlorobenzene	<50	<50	<50	<50
Acetone	<500	<500	<500	<500
Total xylenes	<100	<100	310	<100
Methyl Ethyl Ketone	<500	<500	<500	<500
Methyl Isobutyl Ketone	<500	<500	<500	<500

Approved by:

*Mike Pelton*

Date:

2/2/88

# Laboratory Analysis Request

DATE 1-6-88 PAGE 1 OF 2

PROJECT <u>Acme Trading</u> # <u>T2401.02</u> CLIENT INFO. CONTACT <u>R Bunker</u> ADDRESS <u>Sweet-Edwards</u> TELEPHONE <u>206-423-3580</u> SAMPLERS NAME <u>R Bunker</u> PHONE <u>206-423-3580</u> SAMPLERS SIGNATURE <u>R Bunker</u>					ANALYSIS REQUESTED															GENERAL CHEMISTRY (Specify)					OTHER (Specify)		NUMBER OF CONTAINERS
					BASE/HEU/ACID ORGAN. EC/MS/825/8270 VOLATILE ORGANICS EC/MS/824/8240 HALOGENATED VOLATILE ORGANICS 801/8010 PHENOLICS 804/8040 POLYNUCLEAR AROMATIC 610/8310 TOTAL ORGANIC CARBON (TOC) 415/9060 TOTAL ORGANIC HALIDE (TOX) 9020 EP TOX/TCLP METALS (Circle One) METALS (TOTAL) (See Special Instr.) TCLP ORGANICS PH. COND ALK NO <sub>3</sub> /NO <sub>2</sub> , Cl SO <sub>4</sub> Ca, Mg, Na, K BIOLOGICALS TOX, OIL, GREASE OTHER																						
SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE																							
1. TP-1/S-1	1/6/88	0800		SOL																							1
2. TP-1/S-1		0800		"																							1
3. TP-3/S-1		0830		"																							1
4. TP-3/S-1		0835		"																							1
5. TP-4/S-1		0925		"																							1
6. TP-4/S-1		0925		"																							1
7. TP-4/S-2		0930		"																							1
8. TP-4/S-2		0930		"																							1

Relinquished By <u>Sweet, Edwards &amp; Assoc.</u> <u>Russell, Bunker</u>		Relinquished By		Relinquished By		PROJECT INFORMATION		SAMPLE RECEIPT	
Signature	Printed Name	Signature	Printed Name	Signature	Printed Name	Shipping I.D. No.	VIA	Total No. of Containers	Chain of Custody Seal
<u>Russ Bunker</u>	<u>Sweet-Edwards</u>								Received in good condition
Firm	Date/Time	Firm	Date/Time	Firm	Date/Time	Project		LAB NO.	
<u>1/6/88 1545</u>									
Received By <u>Frank Miller</u>		Received By		Received By		SPECIAL INSTRUCTIONS/COMMENTS <u>As of today (1/6/88) analyze only:</u> ① TP-1/S-1 ② TP-4/S-2 ③ TP-7/S-1 <u>TP-2/S-2</u>			
Signature	Printed Name	Signature	Printed Name	Signature	Printed Name				
<u>Frank Miller</u>	<u>FIAS</u>								
Firm	Date/Time	Firm	Date/Time	Firm	Date/Time				
<u>1/6/88 1548</u>									

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator.

CRAW00004419



Kelso, WA (206) 423-3580  
Redmond, WA (206) 881-0415

# Laboratory Analysis Request

DATE 1-6-88

PAGE 2 OF 2

PROJECT <u>Acme Trading</u> # <u>T2401.02</u>					ANALYSIS REQUESTED															GENERAL CHEMISTRY (Specify)										OTHER (Specify)					NUMBER OF CONTAINERS
CLIENT INFO. CONTACT <u>R. Bunker</u>					BASE/NEU/ACID ORGAN.	GC/MS/823/8270	VOLATILE ORGANICS	GC/MS/824/8240	HALOGENATED VOLATILE ORGANICS	601/8010	PHENOLICS	604/8040	POLYNUCLEAR AROMATIC	610/8310	TOTAL ORGANIC CARBON (TOC)	415/9060	TOTAL ORGANIC HALIDE (TOX)	9020	EP TOX/TOCP METALS (Circle One)	METALS (TOTAL) (See Special Inst.)	TCPP ORGANICS	PH. COND.	ALK.	NO <sub>3</sub> /NO <sub>2</sub> Cl	SO <sub>4</sub>	Ca, Mg, Na, K	ED10, 8020 VOLTS.	TOX; oil & grease	PCB (CBE)						
1.	TP-5/S-1	1/6/88	0950	---	SOIL																										1				
2.	TP-5/S-1	"	0950		"																										1				
3.	TP-7/S-1	"	1025		"																										1				
4.	TP-7/S-1	"	1025		"																										1				
5.	TP-7/S-2	"			"																										1				
6.	TP-7/S-2	"			"																										1				
7.																																			
8.																																			

Relinquished By <u>Russ Bunker</u>		Relinquished By		Relinquished By		PROJECT INFORMATION		SAMPLE RECEIPT	
Signature	<u>Russ Bunker</u>	Signature		Signature		Shipping I.D. No.		Total No. of Containers	
Printed Name	<u>Sweet-Edwards</u>	Printed Name		Printed Name		VIA		Chain of Custody Seals	
Firm	<u>1-6-88, 1545</u>	Firm		Firm		Project		Received in good condition	
Date/Time		Date/Time		Date/Time				LAB NO.	

Received By <u>John H. Hays</u>		Received By		Received By		SPECIAL INSTRUCTIONS/COMMENTS	
Signature	<u>John H. Hays</u>	Signature		Signature		<u>As of today (1/6/88) analyze only:</u> ① TP-1/S-1 ② TP-4/S-2 ③ TP-7/S-1 TP-7/S-2	
Printed Name	<u>J.H.S.</u>	Printed Name		Printed Name			
Firm	<u>1-6-88, 1545</u>	Firm		Firm			
Date/Time		Date/Time		Date/Time			

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator.

SEA-400-05

CRAW00004420

*Columbia Analytical Services, Inc.*

FEB 03 1988

1152 3rd Avenue • Longview, WA 98632 • (206) 577-7222

February 2, 1988

Russ Bunker  
Sweet & Edwards  
P.O. Box Drawer B  
Kelso, WA 98626

RE: MMI (LAMPROS STEEL SITE)

Dear Russ:

Enclosed are the results of samples submitted to our lab on January 12, 1988 for rush analysis. For your reference, our service request number for this work is 88023.

Please call if you have any questions.

Respectfully submitted:  
COLUMBIA ANALYTICAL SERVICES, INC.

*Mike Shelton*

Mike Shelton

CRAW00004421

COLUMBIA ANALYTICAL SERVICES, INC.  
1152 3RD AVE. LONGVIEW, WA 98632  
(206) 577-7222

CLIENT: Sweet & Edwards  
--Russ Bunker  
PROJECT: MMI (LAMPROS STEEL SITE)

February 2, 1988  
WORK ORDER #: 88023

Analytical Report

Sample Name: Units Columbia Forge  
Lab Code: 023-1

Organic Constituents

PCB	mg/kg	<0.5
Benzene	mg/kg	<1.0
Toluene	mg/kg	5.72
Ethyl Benzene	mg/kg	10.3
Total Xylene	mg/kg	85.0
Total TCP	mg/kg	<0.035
Pentachlorophenol	mg/kg	<0.010
TOX	mg/kg	32

Metals

Antimony	mg/kg	<1
Arsenic	mg/kg	<1
Beryllium	mg/kg	<4
Cadmium	mg/kg	<1
Chromium	mg/kg	<2
Copper	mg/kg	60
Lead	mg/kg	<10
Mercury	mg/kg	<0.5
Nickel	mg/kg	63
Selenium	mg/kg	<1
Silver	mg/kg	<10
Thallium	mg/kg	<1
Zinc	mg/kg	<8

Approved by:

*Mike J. L. / bn*

Date:

*2/2/88*

COLUMBIA ANALYTICAL SERVICES, INC.  
1152 3RD AVE. LONGVIEW, WA 98632  
(206) 577-7222

CLIENT: Sweet & Edwards

February 2, 1988

--Russ Bunker

PROJECT: MMI (LAMPROS STEEL SITE)

WORK ORDER #: 88023

Analytical Report

Sample Name:

Units

Columbia Forge

Lab Code:

023-1

Other Constituents

TSS

%

11

Water

%

<0.2

Corrosivity

The pH of this non-aqueous sample is 5.0.

Ignitability

Closed cup flash point was greater than 140 deg. F.

Reactivity

Sample Characteristics

Will not detonate.

Does not react violently with water.

Does not generate sulfides upon acidification.

Cyanides found to be less than 1.0 mg/kg.

Approved by:

*Mike Shelton*

Date:

*2/2/88*

**Sweet, Edwards & Associates, Inc.**

**Kelso, WA (206) 423-3580.**

Redmond, WA (206) 881-0415 

## Chain of Custody / Laboratory Analysis Request

DATE 1-11-82 PAGE        OF       

PROJECT					ANALYSIS REQUESTED															GENERAL CHEMISTRY (Specify)					OTHER (Specify)					NUMBER OF CONTAINERS										
CLIENT INFO. CONTACT																																								
ADDRESS																																								
TELEPHONE#																																								
SAMPLER'S NAME																																								
SAMPLER'S SIGNATURE																																								
SAMPLE I.D.					DATE					TIME					LAB I.D.					TYPE																				
1. Columbia Forge																				Oil																				
2.																																								
3.																																								
4.																																								
5.																																								
6.																																								
7.																																								
8.																																								
Relinquished By					Relinquished By					Relinquished By					PROJECT INFORMATION					SAMPLE RECEIPT																				
Signature					Signature					Signature					Shipping I.D. No.					Total No. of Containers																				
Printed Name					Printed Name					Printed Name					VIA					Chain of Custody Seal																				
Firm					Firm					Firm					Project					Received in good condition																				
Date/Time					Date/Time					Date/Time					SPECIAL INSTRUCTIONS/COMMENTS					LAB NO.																				
Received By					Received By					Received By																														
Signature					Signature					Signature																														
Printed Name					Printed Name					Printed Name																														
Firm					Firm					Firm																														
Date/Time					Date/Time					Date/Time																														

COMBINATION: WHITE - color of substrate YELLOW - sub- PINK - combined to make a

CRAW000004424

# Columbia Analytical Services, Inc.

FEB 03 1988

1152 3rd Avenue • Longview, WA 98632 • (206) 577-7222

February 2, 1988

Russ Bunker  
Sweet & Edwards  
P.O. Box Drawer B  
Kelso, WA 98626

RE: MMI (LAMPROS STEEL SITE)

Dear Russ:

Listed below are the results of samples submitted to our lab on January 19, 1988. For your reference, our service request number for this work is 88039.

Please call if you have any questions.

## Analytical Report Units = % As Rec'd

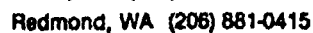
Sample Name	Lab Code	Oil & Grease	Solids
Tank 1	039-1	0.01	75.2
Tank 2	039-2	0.02	89.5
Tank 3	039-3	0.02	78.5

Respectfully submitted:  
COLUMBIA ANALYTICAL SERVICES, INC.

*Mike Shelton*

Mike Shelton

CRAW00004425



DATE 1-2-68 PAGE 1 OF 1

**SEA-400-05**

CRAW00004426

Tables

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CRAW00004445

**APPENDIX A**

**DEQ LETTER REQUESTING BLACK SAND  
REMOVAL ACTION**

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BRIDGEWATER GROUP, INC.

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CRAW00004339



# Oregon

John A. Kitzhaber, M.D., Governor

## Department of Environmental Quality

Northwest Region Portland Office

2020 SW 4<sup>th</sup> Avenue, Suite 400

Portland, OR 97201-4987

(503) 229-5263

FAX (503) 229-6945

TTY (503) 229-5471

August 28, 2001

Matt Cusma  
Schnitzer Steel Industries  
P.O. Box 10047  
Portland, Oregon 97296-0047

RE: Black Sand Removal  
Crawford Street Corporation Site  
8424 and 8524 N. Crawford Street, Portland, Oregon

Dear Mr. Cusma:

Thank you for submitting the Conceptual Plan (attached) for removal of the black sand contamination documented as part of the Expanded Preliminary Assessment (XPA) of the above-referenced site. Elevated levels of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls, and chromium, lead, and zinc were observed in the black sand, and are considered hazardous substances per ORS 465.200. Black sand delineated on the beach and the "bluff (top of bank)" is susceptible to erosion into the Willamette River or may be submerged during higher water levels than currently exist.

Based on contaminant concentrations in the black sand, the Department of Environmental Quality (DEQ) has determined that contaminant migration to the Willamette River from the black sand on the subject site may pose a threat to human health and the environment and warrants removal action measures (i.e., source control) under OAR 340-122-070. As a result, DEQ requires that Crawford Street Corporation take necessary black sand removal actions as described in the conceptual plan to mitigate the unacceptable risk.

Please call me if you have questions.

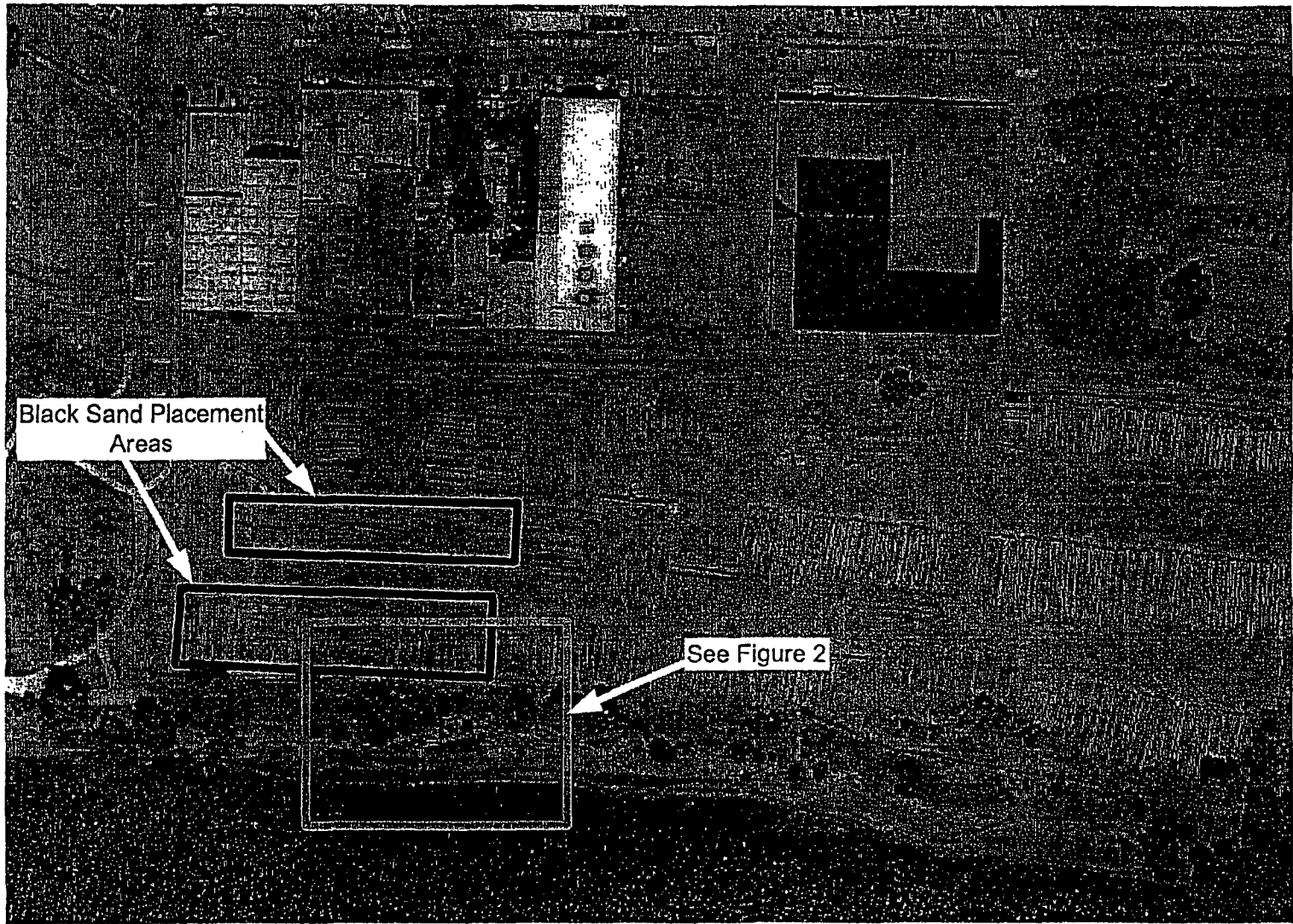
Sincerely,

Tom Gainer, P.E.  
Project Manager  
Voluntary Cleanup/Portland Harbor

Attachment



CRAW00004340



Approximate Scale

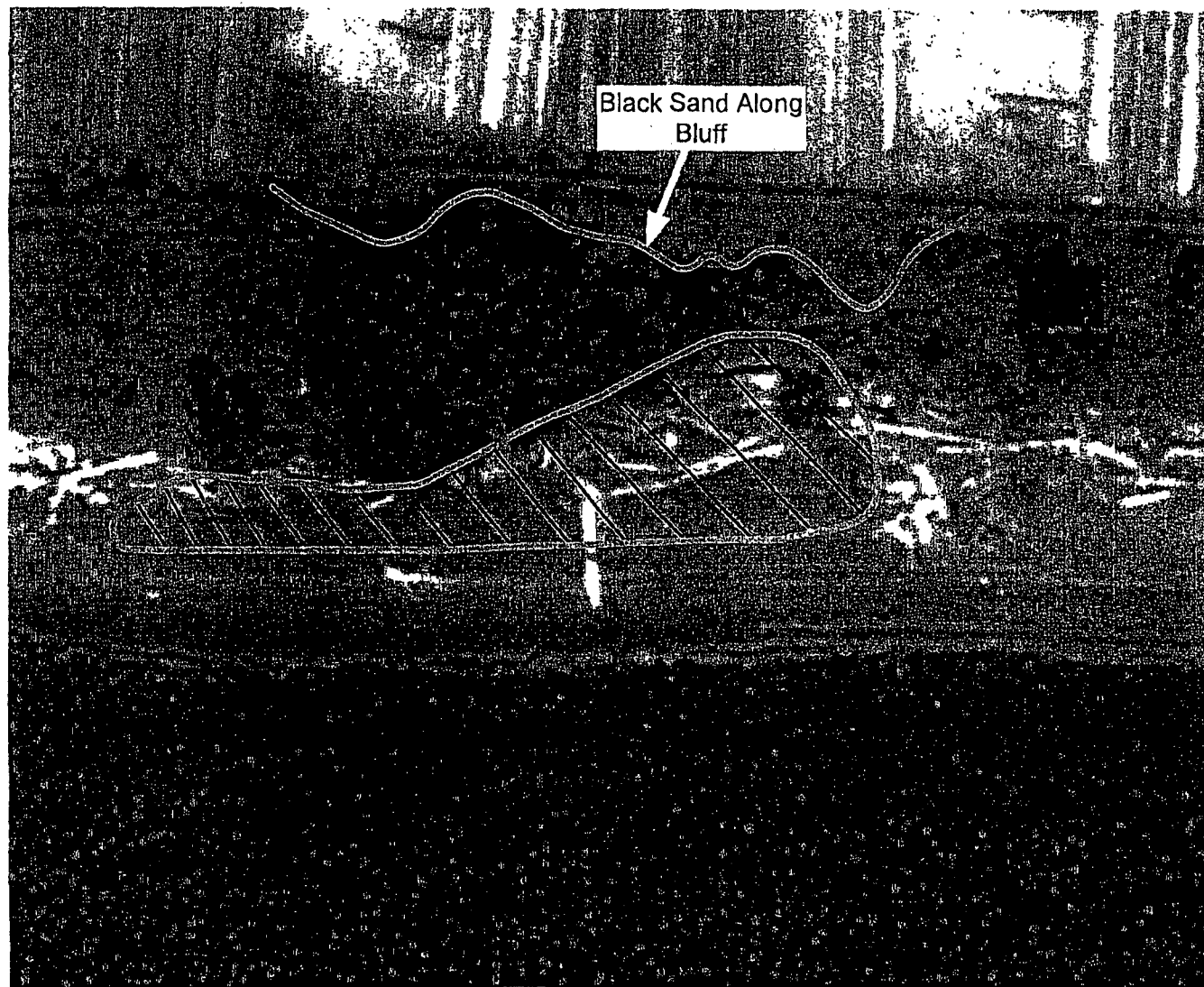


128 ft.

**Figure 1**  
Site Plan

Crawford Street Corporation

BRIDGEWATER GROUP, INC.



Black Sand Along  
Bluff



Approximate Scale  
30 feet



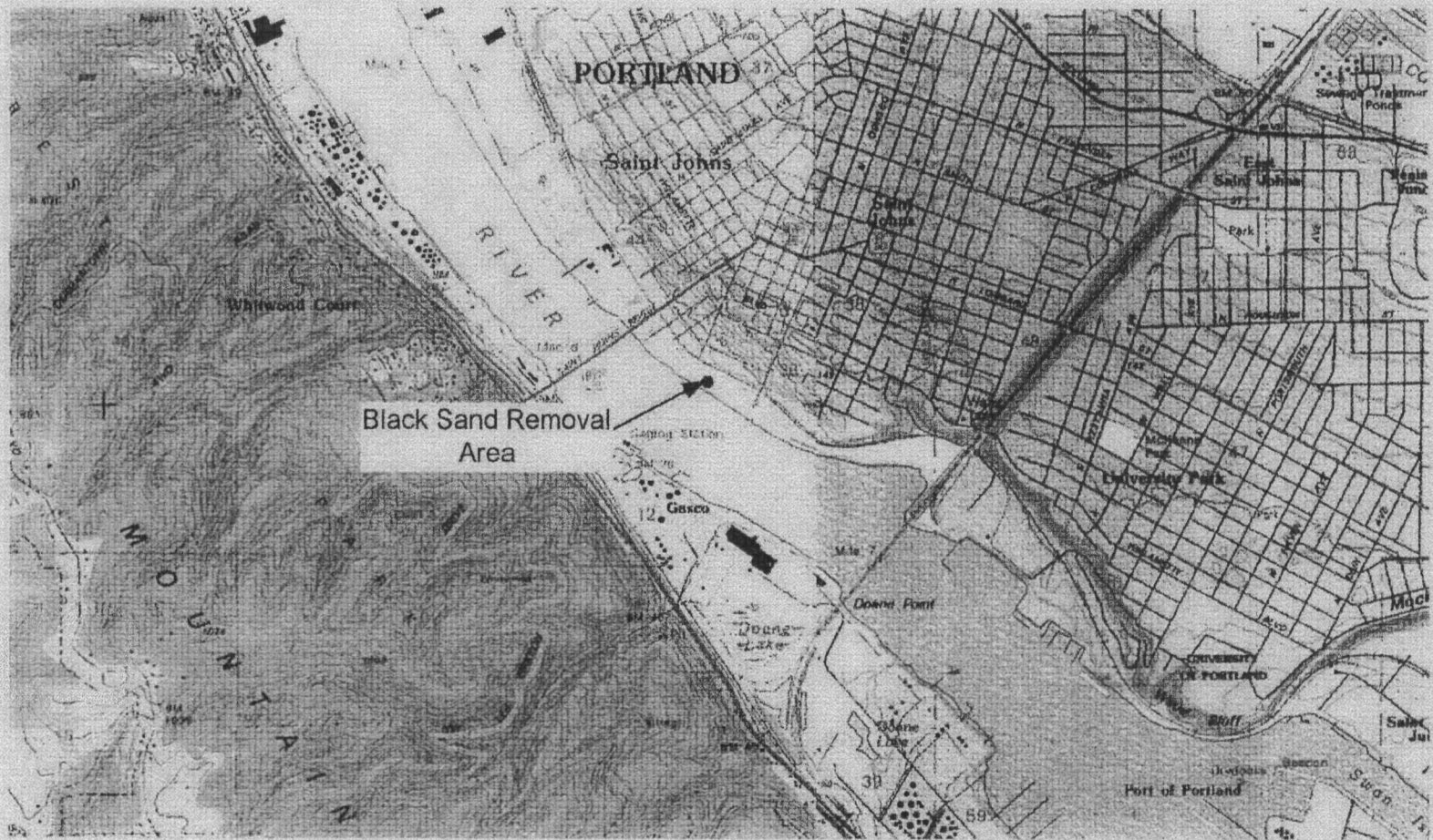
Black sand on surface (removal area)  
Approximately 1.5 feet deep

**Figure 2**

Black Sand Removal Area  
Crawford Street Corporation

BRIDGEWATER GROUP, INC.





Black Sand Removal Area at  
 $45^{\circ} 35' 3'' \text{ N}$  and  $122^{\circ} 45' 25'' \text{ W}$

Approximate Scale

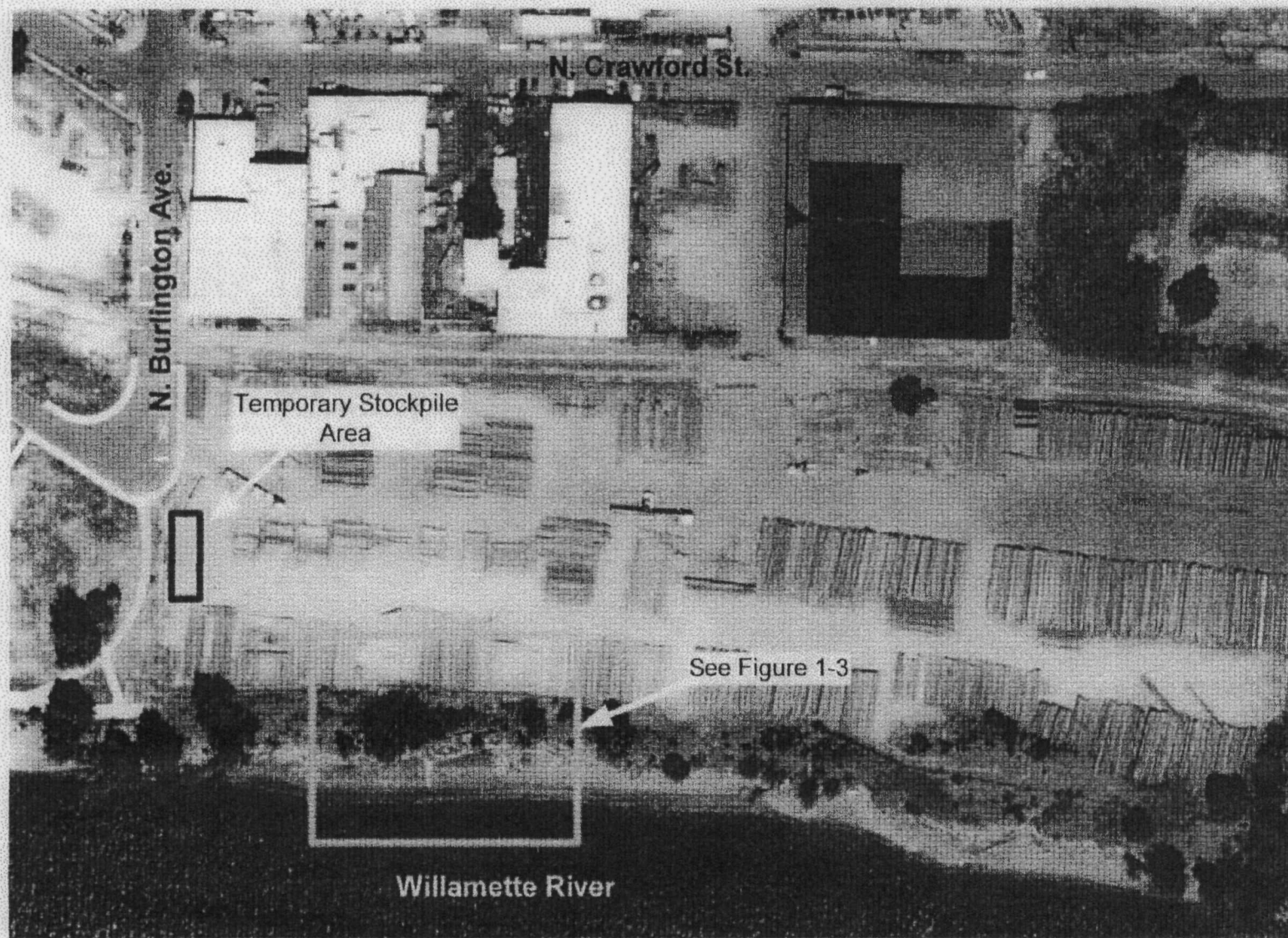


2400 feet

**Figure 1-1**

Site Location Map  
 Crawford Street Corporation Site

BRIDGEWATER GROUP, INC.



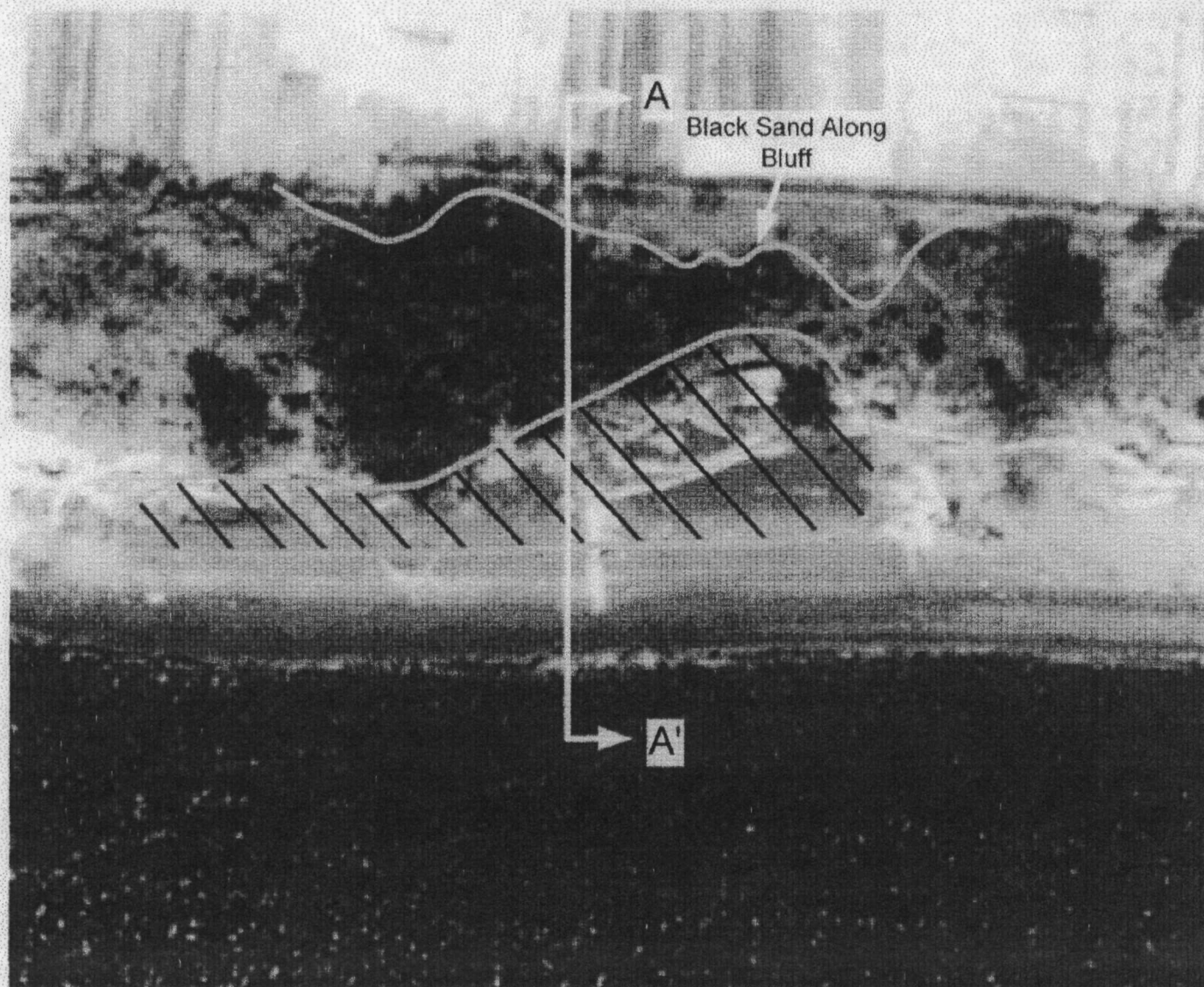
Approximate Scale  
128 ft.

**Figure 1-2**

Site Plan

Crawford Street Corporation

BRIDGEWATER GROUP, INC.



A

Black Sand Along  
Bluff

A'



Approximate Scale



30 feet

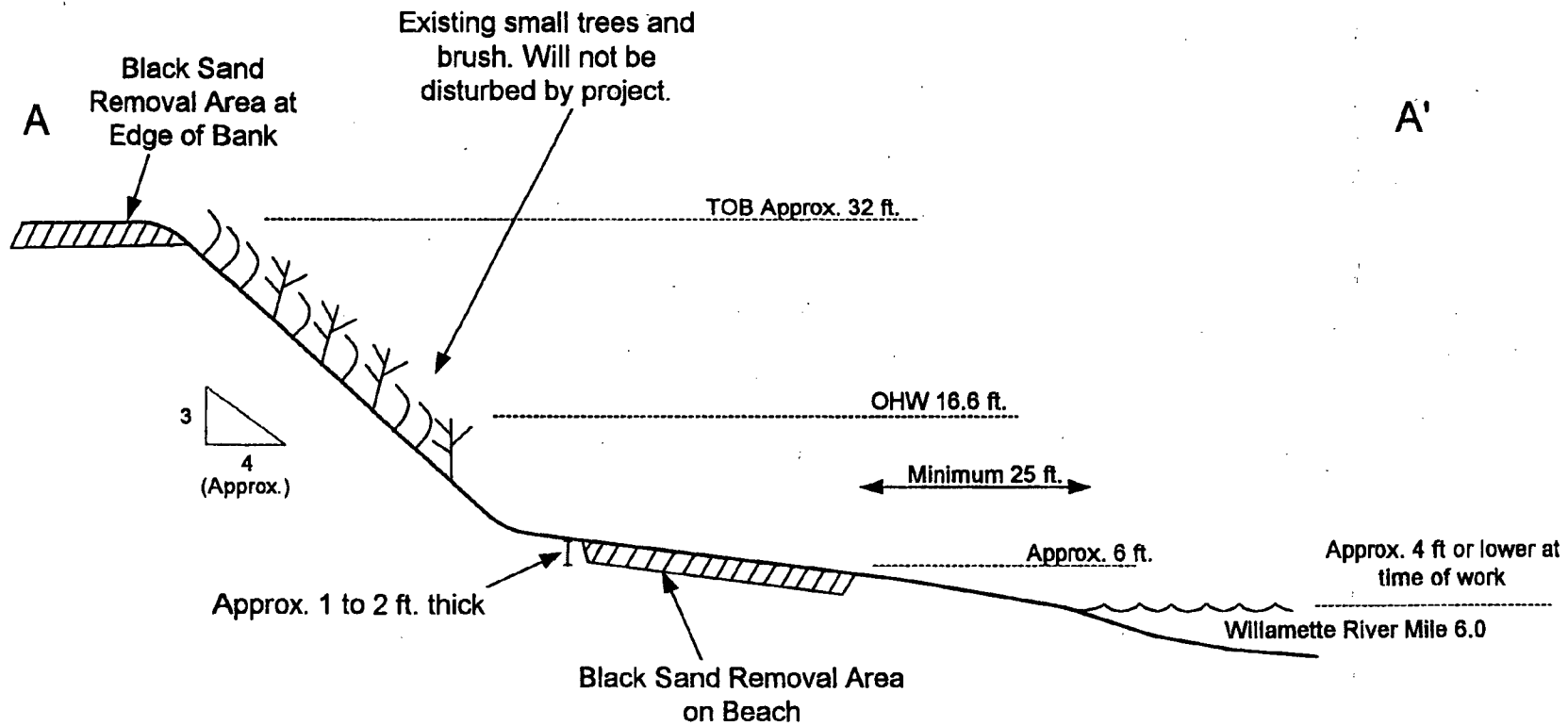


Black Sand Removal Area  
Approximately 1.5 feet deep

**Figure 1-3**

Black Sand Removal Areas  
Crawford Street Corporation

BRIDGEWATER GROUP, INC.



Note: Figure Not Drawn to Scale  
Elevations Based on NGVD

**Figure 1-4**  
Cross Section A-A'  
Crawford Street Corporation

BRIDGEWATER GROUP, INC.

Figures

**Table 1-1**  
**Detected Chemical Concentrations in Black Sand**  
**Petroleum Hydrocarbons**  
**Crawford Street**  
All results in mg/kg

Sample	Location	Date	Sample Depth (ft)	Gasoline	Diesel	Heavy oil
SS-05	Black sand - shoreline	4/24/2001	0.5	4 U	25 U	50 U
SS-10	Black sand - bank	4/26/2001	2.0	4 U	78.3	180
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	4 U	25 U	194
BS-1A	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA
BS-1B	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA
BS-1C	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA
BS-1D	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA
CS-1	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA
CS-2	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA
CS-3	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA
CS-4	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA

U - Not detected at noted reporting limit  
NA - Not analyzed

**Table 1-2**  
**Detected Chemical Concentrations in Black Sand**  
**PAHs and PCBs**  
**Crawford Street**  
**All results in mg/kg**

Sample	Location	Date	Sample Depth (ft)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	ΣPAHs	ΣPAHs	Total PAHs	PCBs	
SS-05	Black sand - shoreline	4/24/2001	0.5	0.067 U	0.067 U	0.067 U	0.0683	0.0826	0.0811	0.0742	0.072	0.08	0.067 U	0.144	0.067 U	0.067 U	0.067 U	0.168	0.127	0.168	0.901	1.059	0.224	
SS-10	Black sand - bank	4/26/2001	2.0	0.096	0.87 U	0.192	0.498	0.768	0.728	0.573	0.582	0.63	0.168	0.927	0.100	0.515	0.067 U	0.656	0.742	1.046	6.233	7.279	1.11	
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	NA	NA	NA	NA	
BS-1A	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BS-1B	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BS-1C	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BS-1D	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CS-1	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CS-2	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CS-3	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
McDonald Consensus TEQs (sediment)				0.0672			0.108	0.15					0.17	0.033	0.423	0.077	0.176			0.204	0.195	1.81	0.06	
NOAA SQRT TEL							0.0317	0.0319					0.06	0.111			0.042			0.053				0.034

U - Not detected at noted reporting limit  
 NA - Not analyzed

**Table 1-3**  
**Detected Chemical Concentrations in Black Sand**  
**Metals**  
**Crawford Street**  
All results in mg/kg

Sample	Location	Date	Sample Depth (ft)	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc	
SS-05	Black sand - shoreline	4/24/2001	0.5	NA	NA	NA	0.5 U	202	NA	65.3	0.1 U	NA	NA	NA	NA	NA	
SS-10	Black sand - bank	4/26/2001	2.0	NA	NA	NA	0.5 U	174	NA	140	0.1 U	NA	NA	NA	NA	NA	
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	0.5 U	5.65	0.5 U	0.5 U	69	170	45.6	0.167	29	0.503	0.5 U	0.5 U	178	
BS-1A	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	52.3	NA	NA	NA	NA	NA	NA	
BS-1B	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	58.9	NA	NA	NA	NA	NA	NA	
BS-1C	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	89	NA	NA	NA	NA	NA	NA	
BS-1D	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	558	NA	NA	NA	NA	NA	NA	
CS-1	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	42	NA	NA	NA	NA	NA	NA	
CS-2	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	28	NA	NA	NA	NA	NA	NA	
CS-3	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	NA	NA	2150	NA	NA	NA	NA	NA	NA	
McDonald Consensus TECs (sediment)				9.79		0.99		43.4	31.6	35.8	0.18	22.7					121
NOAA SQRT TEL																	

U - Not detected at noted reporting limit  
NA - Not analyzed

**Table 1-4**  
**Detected Chemical Concentrations in Black Sand**  
**TCLP Metals**  
**Crawford Street**  
All results in mg/l

Sample	Location	Date	Sample Depth (ft)	TCLP Arsenic	TCLP Cadmium	TCLP Chromium	TCLP Copper	TCLP Lead	TCLP Mercury	TCLP Nickel	TCLP Zinc
SS-05	Black sand - shoreline	4/24/2001	0.5	NA	NA	0.5 U	NA	7.39	NA	NA	NA
SS-10	Black sand - bank	4/26/2001	2.0	NA	NA	0.5	NA	1.1	NA	NA	NA
SS-08	Pipe outfall (black sand area)	4/24/2001	0.5	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.0002 U	NA	1.45
BS-1A	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	16.8	NA	NA	NA
BS-1B	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA
BS-1C	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA
BS-1D	Black sand - shoreline	6/22/2001	0.5	NA	NA	NA	NA	NA	NA	NA	NA
CS-1	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	0.17	NA	NA	NA
CS-2	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	0.3	NA	NA	NA
CS-3	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	14.2	NA	NA	NA
CS-4	Black sand - shoreline	7/17/2001	0.5	NA	NA	NA	NA	0.23	NA	NA	NA

U - Not detected at noted reporting limit

NA - Not analyzed




## Boring Log

**Project Site:** Crawford Street PA

**Boring Identifier:** PP-1

Contractor: Geotech Explorations  
Sampled: Continuous  
Location: See Map  
Surface Elevation: NA


Construction Method: Geoprobe  
Logged By: Dennis R. Dykes  
Date Constructed: April 25, 2001  
Total Depth: 40 feet bgs

Well Details	Depth (feet)	PID	Soil Description
	5	18.4	0 to 7.2 feet: Black Sand (SW), medium angular grains, damp, concrete at 3 feet bgs, gray silt 3.1 to 3.6 feet bgs, Fill.
	10	15.7	7.2 to 7.8 feet: Silt (ML), gray, soft, damp, Fill.
			7.8 to 8.0 feet: Concrete, refusal, moved 1.5 feet west and penetrated
			8 to 16 feet: Mixed Fill, wood, concrete, black and brown silt layers, black sand, brick fragments, Fill.
	15	12.1	
	20	10.6	16 to 32 feet: Silt w/Sand Interbeds (ML/SW-SM), silt is gray, firm, damp to moist, sand is gray, fine, saturated below 27 feet, Alluvium.
	25	12.7	
	30		

# Boring Log

Project Site: Crawford Street PA


Boring Identifier: PP-1

Well Details	Depth (feet)	PID	Soil Description
		11.6	32 to 38.5 feet: Sand w/Silt Interbeds (SW-SM/ML), sand is gray, fine, saturated, silt is gray, firm, moist, Alluvium.
	35	11.1	
	40		38.5 to 40 feet: Silt (ML), gray grading to light brown at 40 feet bgs, firm, moist, Alluvium.
			Bottom of boring at 40 feet bgs.
			<p>Well details:</p> <p>0 to 30 feet bgs: ¾-inch PVC pipe, threaded ends with o-ring</p> <p>30 to 40 feet bgs: prepacked screen (slotted ¾-inch PVC pipe surrounded by 20-40 washed silica sand in a ss mesh)</p> <p>0 to 1 feet bgs: backfill is concrete</p> <p>1 to 28 feet bgs: backfill is granular bentonite</p> <p>28 to 40 feet bgs: backfill is 10-20 silica sand</p> <p>Flush monument at surface</p>

**Boring Log****Project Site: Crawford Street PA****Boring Identifier: PP-2**

Contractor: Geotech Explorations  
Sampled: Continuous  
Location: See Map  
Surface Elevation: NA

Construction Method: Geoprobe  
Logged By: Dennis R. Dykes  
Date Constructed: April 24, 2001  
Total Depth: 40 feet bgs

Well Details	Depth (feet)	PID	Soil Description
	5		0 to 0.5 feet: Gravel/Soil (GP/GM), medium angular grains, damp, Fill
			0.5 to 1.0 feet: Concrete
			1.0 to 1.5 feet: Asphalt
		20.7	1.5 to 2.0 feet: Sand (SP), medium, dark brown, pebbles, Fill
			2.0 to 7.5 feet: Silt (ML), brown, soft to firm, damp, Fill
	10	31.0	7.5 to 14.0 feet: Sand (SP/SM), reddish brown to brown, rust chunks, rock, gravel, silty sections, Fill
		34.8	
	15		14 to 16 feet: Silt (ML): brown 14 to 15 feet, gray 15 to 16 feet, firm, charcoal fragments, damp, Fill
		45.6	
	20		16 to 19 feet: Gravel (GP-GM), gray to brown 16 to 18, reddish 18 to 19, rust fragments, sand and silt, damp to moist, Fill.
		52.6	19 to 32 feet: Silt w/Sand (ML), brown, silt is firm and moist, sand beds are fine and saturated below 26.5 feet, Alluvium
	25	17.0	
		18.3	
	30		

**Boring Log****Project Site: Crawford Street PA****Boring Identifier: PP-2**

Well Details	Depth (feet)	PID	Soil Description
	35	19.9	32 to 40 feet: Sand w/Silt Interbeds (SW-SM/ML), sand is brown, fine, saturated, silt is brown, firm, moist, Alluvium.
	40	22.6	
			Bottom of boring at 40 feet bgs.
			Well details: 0 to 30 feet bgs: ¾-inch PVC pipe, threaded ends with o-ring 30 to 40 feet bgs: prepacked screen (slotted ¾-inch PVC pipe surrounded by 20-40 washed silica sand in a ss mesh) 0 to 1 feet bgs: backfill is concrete 1 to 28 feet bgs: backfill is granular bentonite 28 to 40 feet bgs: backfill is 10-20 silica sand Flush monument at surface

**Boring Log****Project Site: Crawford Street PA****Boring Identifier: PP-3**

Contractor: Geotech Explorations  
Sampled: Continuous  
Location: See Map  
Surface Elevation: NA

Construction Method: Geoprobe  
Logged By: Dennis R. Dykes  
Date Constructed: April 24, 2001  
Total Depth: 40 feet bgs

Well Details	Depth (feet)	PID	Soil Description
			0 to 2 feet: Silt/Sand (ML/SW), black, gravelly, moist, Fill
	5	15.8	2 to 20 feet: Silt (ML), brown, firm, damp to moist, fine sand 16 to 20 feet, Alluvium
		15.5	
	10	14.5	
		13.9	
	15		
	20	13.7	20 to 24 feet: Sand (SW), brown, fine, moist, Alluvium
		13.5	24 to 28 feet: Silt (ML), brown, firm, moist, saturated sand bed 26.5 to 27 feet, Alluvium
	25		
		11.5	28 to 32 feet: Sand (SW), brown, fine, saturated, Alluvium
	30		

**Boring Log****Project Site: Crawford Street PA****Boring Identifier: PP-3**

Well Details	Depth (feet)	PID	Soil Description
			<b>32 to 35 feet: Silt (ML),</b> brown, firm, moist, Alluvium
	35	12.6	<b>35 to 40 feet: Sand (SW),</b> brown, fine, micaceous, saturated, silty 35 to 36 feet, silt in shoe of sampler at 40 feet, Alluvium
	40	12.6	
			Bottom of boring at 40 feet bgs.
			Well details: 0 to 30 feet bgs: ¾-inch PVC pipe, threaded ends with o-ring 30 to 40 feet bgs: prepacked screen (slotted ¾-inch PVC pipe surrounded by 20-40 washed silica sand in a ss mesh) 0 to 1 feet bgs: backfill is concrete 1 to 27.5 feet bgs: backfill is granular bentonite 27.5 to 31.5 feet bgs: backfill is 10-20 silica sand 31.5 to 40 feet bgs: slough Flush monument at surface

Appendix B